

## **ILLEGAL RESOURCE USE AND RESETTLEMENT OF PEOPLE FROM KARUMA WILDLIFE RESERVE IN UGANDA**

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### **ABSTRACT**

Provision of land and resettlement of people living illegally in protected areas are important processes in economic empowerment of local communities and conservation of natural resources. This study highlights a prevailing natural resource management problem, that is, illegal settlement and resource use in Karuma Wildlife Reserve. The aim of the study was to assess whether or not voluntary resettlement of encroachers in the reserve could help to reduce illegal use of resources. This was accomplished by carrying out household interviews and visiting the resettlement sites. It was found that provision of land alone for settlement and farming cannot reduce illegal resource use. Local communities need financial support to carry out other alternative economic activities to improve their incomes and reduce dependence on protected resources. It was concluded that people living in abject poverty cannot support conservation of resources without alternative income generating activities. Moreover, local communities should be directly involved in resource conservation and management.

*Key words: resource use, conservation local communities, resettlement, economic activities.*

### **INTRODUCTION**

Conservation and utilisation of resources directly relate to the processes of planning, organisation and control (McCracken, 1989). In recent years, several studies have been conducted in order to provide information that can be used directly or indirectly for planning, management and conservation of natural resources. One of the recent approaches to management of protected resources has been a shift from the traditional coercive method of resource protection to a participatory strategy whereby local communities living around protected areas are encouraged to participate in the conservation of such resources. Early approaches paid more attention to resource conservation than the needs of the local communities (Anderson and Grove, 1989). Yet for populations living near protected areas and largely depending on local resources for their livelihood, excluding them from conservation programmes would adversely effect their socio-economic well-being.

Resettlement of encroachers from protected areas is often aimed at reducing human pressure

on protected resources. For this reason, governments and conservation agencies usually support resettlement of encroachers in order to reduce illicit resource use. Forced evictions would create conflicts and are likely to result in rapid resource degradation.

Protected areas in Uganda have experienced illicit resource use mainly due to unsustainable land use systems around them. According to Grainger (1993), illicit resource use can be adequately controlled if farming systems around protected areas are made more productive and sustainable. Barrow (1991) noted that the strategy for long term management of protected resources is to reduce poverty among local communities. This article presents the findings of a study carried out in Karuma Wildlife Reserve (KWR) in western Uganda where the Environmental Protection and Economic Development (EPED) project is resettling illegal immigrants from the reserve. The objectives were: (1) to assess the use of resources in KWR and the attitudes of local people towards the resettlement programme and (2) to identify the constraints to the resettlement exercise and assess whether or not provision of land and social services (roads, schools and health centres) could reduce illegal resource use in KWR.

## **THE STUDY AREA AND BACKGROUND TO THE EPED PROJECT**

Karuma Wildlife Reserve is located north-west of Masindi town in western Uganda between 31° 45'-32° 15' W and 1° 0'-2° 15' N (Figure 1). In 1964, Karuma was designated as a wildlife reserve after a severe tsetse fly infestation depopulated large areas of Bunyoro (now called Masindi district) between 1898 and 1915. A report by Uganda Wildlife Authority (1997) indicates that about 13 000 km<sup>2</sup> of land on both sides of River Nile were evacuated.

The EPED project began in April 1996 after the local administration in Masindi district identified the problem of illicit resource use and environmental degradation in KWR. It was decided that the problem could be overcome by carrying out voluntary resettlement of households residing in the reserve. Furthermore, the EPED project noted that poverty and lack of secure land were the main causes of illicit resource use and environmental degradation in KWR. The project has two major aims: firstly, to assist the local district administration of Masindi to build capacity to effectively plan, manage, monitor and protect resources in KWR. Secondly, to create conditions that would help to restore the conservation status of KWR by providing land to the households living in the reserve, resettling illegal immigrants, increasing agricultural production/improving incomes of local communities living around the reserve and provision of social services.

## **HISTORY OF ILLEGAL SETTLEMENT IN KWR**

In the 1950s the Maragoli tribe from western Kenya came to Uganda to look for employment during the construction of the Gulu-Kampala highway. They settled in the areas close to KWR in the then Bunyoro District and practised subsistence farming. In the 1970s the government of Uganda introduced the "double production campaign" in the Ministry of Agriculture aimed at increasing the output of cash crops such as tobacco, cotton, tea and coffee for export. Due to breakdown in law and order at the time and availability of unoccupied land, many tribes from other parts of Uganda migrated and settled in Masindi District where they cultivated tobacco and cotton. The settlements later spread close to KWR and eventually into the reserve. At the same time land scarcity in Mbale District in eastern Uganda and eviction of several families from Mount Elgon Forest Reserve forced some people to migrate and settle in Masindi District. By 1995 there were about 1 000 households living in KWR. They cultivated land, planted agricultural crops and reared livestock.

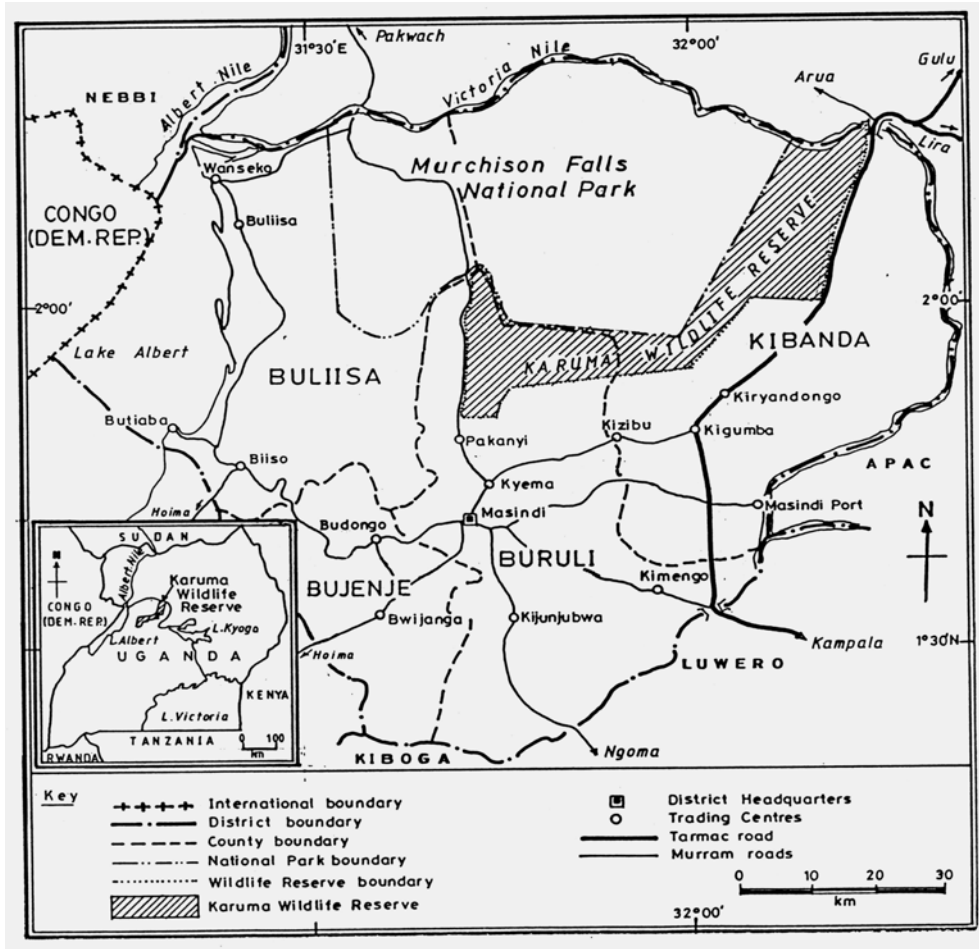


Figure 1. Karuma Wildlife Reserve in Masindi District, Uganda

Lack of secure land and alternative economic activities continued to present formidable obstacles to the economic self-reliance of the immigrants. Without other economic opportunities, it became difficult for them to live on subsistence farming only. Furthermore, the population increased and the immigrants continued to depend on resources in KWR as a major source of livelihood. This resulted in severe erosion of resources and degradation of the environment in the reserve.

## METHODS

### *Household interviews*

A semi-structured questionnaire was used to collect information from 125 households living in the wildlife reserve and at the new resettlement sites located about 20 kilometres in the southern part of KWR. These were households to be resettled under the EPED project. Questions focused

mainly on demographic and socio-economic characteristics of the households, resource use and attitudes towards the resettlement programme. Discussions were held with local community leaders to solicit their opinions on the resettlement exercise. Households in the wildlife reserve and at the new sites were also visited to observe the resettlement process. Problems being encountered by the EPED project staff and the households were discussed.

**Data analysis**

Data were coded and analysed using SPSS computer software. Logistic regression model (Koutsoyiannis, 1988) was used to show the influence of demographic and socio-economic factors on resource use by local communities.

The model is represented as:

$$P_i = \frac{1}{1 + e^{-z}}$$

where:  $P_i$  = probability of an individual making a choice which is dependent on a socio-economic variable (e.g. tribe, age, sex, occupation, income),  
 $e$  = the base of natural logarithm,  
 $z$  = linear combination of socio-economic variables expressed as  $B_0 + B_1X_1 + B_2X_2 + \dots + B_n X_n$ ,  
 $X$  = value of socio-economic variable,  
 $B$  = corresponding coefficients, and  
 $B_0$  = coefficient of the constant.

**RESULTS AND DISCUSSION**

**Demographic and Socio-Economic Characteristics**

The majority (93.6%) of the households were headed by males and 90.4% were aged between 20 and 50 years old. On average each household had seven persons (Table 1). This is higher than the average for Masindi district estimated by the 1991 national housing and population census at five persons per household (Ministry of Finance and Economic Planning, 1992). Clearly, the demand for resources such as firewood and building poles hitherto obtained freely by the local communities from the wildlife reserve will continue to rise. It will be necessary to implement a tree planting programme to provide firewood and building poles in order to reduce dependence on the natural woodlands. Over half of the households have lived in KWR for more than 10 years. The major ethnic groups living in the reserve were the Bagisu, Banyoro, Maragoli from Kenya, Alur, Baruli and Baganda. Sixty three per cent of the respondents had primary education, 20% had secondary education, two per cent had tertiary and 15% had no formal education at all. This suggests that the local communities would rely on indigenous knowledge if they are to be involved in a future programme of resource protection in the wildlife reserve. Collaborative management of natural resources has recently gained widespread recognition and it would be an appropriate approach to adopt in the areas surrounding Karuma Wildlife Reserve. Ninety eight per cent of the respondents were farmers whose incomes are based on selling agricultural produce.

**Resource use**

The illegal settlers depended directly on the resources for their livelihood. For example, they harvested building poles, firewood, traditional medicines, honey, mushrooms and bush meat (Table 2). It was noted that the Alur and Bagisu especially hunted wild animals for bush meat which was

Table 1. Demographic and socio-economic characteristics of the households interviewed around Karuma Wildlife Reserve (N=125).

Demographic and socioeconomic characteristics	Response	%
<b>Age</b>		
20-30	31	24.8
31-40	39	31.2
41-50	28	22.4
51-60	15	12.0
>60	12	9.6
<b>Sex</b>	117	93.6
Male	8	6.4
Female		
<b>Number of people per household</b>		
1-4	43	34.4
5-8	64	51.2
9-12	12	9.6
>13	6	4.8
<b>Ethnicity</b>	94	75.2
Bagisu	13	10.4
Banyoro	9	7.2
Maragoli	4	3.2
Alur	3	2.4
Baruli	2	1.6
Baganda		
<b>Level of education</b>	21	16.8
No formal education	79	63.2
Primary	23	18.4
Secondary	2	1.6
Tertiary		
<b>Occupation</b>		
Farmer	122	97.6
Trader	1	0.8
Other	2	1.6
<b>Source of income</b>		
Wages	2	1.6
Salary	1	0.8
Sale of agricultural produce	122	97.6

consumed by households or sold for cash. Since these communities have lived and depended on the resources in KWR for a long time, the biological resources therein have been considerably reduced, particularly in the southern part of the reserve (Turyatunga, 1995). According to Dixon and Sherman (1990), long term harvesting of wild resources can reduce the population of economically valuable species. Without appropriate conservation measures, therefore, the resources can be rapidly degraded and the ecosystem ecology disturbed. However, at the new resettlement sites there is still plenty of firewood and building poles being harvested from the surrounding bushes and savanna woodlands. It is expected that as the households settle down, embark on farming and tree planting, pressure on the resources in KWR will be reduced.

Table 2. Products collected from Karuma Wildlife Reserve (N=125)

Product	Response	%
Firewood	123	98.4
Building poles	120	96.0
Traditional medicines	97	77.6
Honey	81	64.8
Bush meat	31	24.8
Mushrooms	29	23.2

A logistic regression analysis shows that resource use in KWR is significantly associated with the demographic and socio-economic characteristics of the households (Table 3). In particular, population increase and lack of alternative income generating activities are likely to present further management problems in KWR because the local communities will continue to harvest more resources from the reserve. Therefore, the EPED project and Masindi local administration need to address these problems as they will result in continuous resource use and environmental degradation at the new settlement sites.

Table 3. Logistic Regression of Demographic/Socio-Economic Characteristics of Local Communities and Resource Use in Karuma Wildlife Reserve.

Socio-economic variable	R <sup>2</sup>	B	P	Significance
Sex	0.00	-1.15	0.41	ns
Age	0.00	0.32	0.30	ns
Marital status	0.26	-3.08	0.01	**
Family size	0.21	1.10	0.02	*
Tribe	0.00	- 0.64	0.36	ns
Education	-0.20	0.69	0.02	*
Income	0.00	6.16	0.86	ns

\*\* = significant at P# 0.01, \* = significant at P# 0.05, ns = not significant

***Attitudes Towards the Resettlement Programme***

All the households interviewed said they supported the voluntary resettlement programme.

This is important for two main reasons. Firstly, it indicates that the households living in KWR will move out and cultivation and harvesting of biological resources will diminish over time. Secondly, it shows that local communities have positive attitudes towards the conservation of KWR. These observations agree with a report by Nepal and Weber (1995) that positive attitudes of local communities are essential for establishing collaborative resource management and conservation programmes. Chi square tests (Table 4) showed that apart from education and occupation, the attitudes of the respondents towards the resettlement programme were not affected by their socio-economic characteristics. Generally, educated people have wider economic prospects and may not solely rely on farming to generate income. On the other hand the peasant farmers may see the resettlement programme as an impediment to their major economic activity although they were not explicit on this.

Table 4. Chi Square Test of the Relationship Between the Socio-Economic Factors and Attitudes of the Respondents Towards the Resettlement Programme (N=200)

Socio-economic factor	X <sup>2</sup>	df	Probability	Significance
Sex	0.08	1	0.77	ns
Age	2.25	3	0.52	ns
Ethnicity	3.73	4	0.29	ns
Education	20.2	3	0.00	***
Occupation	24.4	2	0.00	***
Income	0.33	3	0.85	ns

ns= association not significant at P#0.05 \*\*\* = association significant at P#0.001

#### ***Constraints to the Resettlement Programme***

Two major constraints present formidable challenges to the EPED project. Firstly, poor roads are hindering the provision of social services such as health care and education. The new sites are very remote and families transport their household items on foot over long distances. At the time of the study, only 80 households had moved out of KWR for lack of transport and good roads. Secondly, it was noted that EPED did not have enough financial resources to adequately meet the cost of resettlement, road maintenance and supporting economic activities other than crop farming that would reduce local communities' dependence on the resources. Clearly, the success of the voluntary resettlement programme in KWR will depend on EPED's capacity to address the question of poverty among the resettlers and the establishment of physical and social infrastructure in good time. At the moment it is unlikely that the EPED project will overcome the above constraints because the project ended in 1998. At the same time there are no prospects for financial support from the government as all the district operations in Uganda have been decentralised and Masindi, like most districts, does not have adequate financial resources to support the conservation of KWR.

#### **CONCLUSIONS AND RECOMMENDATIONS**

It is clear that provision of land alone will not reduce illegal activities by local communities in KWR. Poverty among the local communities needs to be properly addressed within a wider framework that links natural resource conservation to rural development. Local communities living around

KWR should be empowered economically, for example, by providing them with short-term loans from a revolving fund to diversify economic activities. The loan could be used, for example, to support youth and women's groups to establish grinding mills and or carry out bee keeping, poultry and dairy production. Furthermore, social services ( e.g. health centres and schools) and infrastructure (e.g. roads) should be established as soon as possible. Although a good road network will enable the resettlers to transport and sell their agricultural produce in nearby markets to obtain income and meet their requirements, it has the danger of attracting settlements that could spread towards KWR again. In order to ensure the long term conservation of resources in KWR local communities should be involved directly in the management of the reserve. Opportunities for introducing a collaborative management arrangement should be explored. According to Yeager and Miller (1986), local participation and involvement are key ingredients in natural resource conservation. Therefore, the success of resource conservation in KWR will largely depend upon local community cooperation and input.

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