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Woodlots, Woodfuel and Wildlife: Lessons from Queen Elizabeth National Park, Uganda

Tom Blomley

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2000

Executive Summary

Many integrated conservation and development projects aimed at addressing human impacts on protected areas in developing countries use strategies of 'resource substitution', where alternative sources of products obtained from protected areas (such as firewood and building poles) are encouraged through their production on-farm. In this paper, the experiences of such an approach in Queen Elizabeth National Park in Uganda show how without a deep understanding of the full socio-economic conditions of the communities impacting upon the protected area, such solutions can be ineffective, or can even exacerbate the problem.

In an attempt to reduce the perceived impact of local timber and firewood collection on the park's ecology, a woodlot programme was developed. Whilst the initial results of the programme appear to be impressive, deeper investigation reveals that rather than alleviating the problems between the park and the people, the project may have worsened them:

- The establishment of trees appears to have increased damage of property by park animals, while encroachment of occupied land into park territory has in some cases been hotly contested by the park authority. The park clearly views moves by villagers to establish woodlots as a means to cement and (in some cases) extend their land tenure rights within the protected area.
- There is some doubt over whether the trees planted within fishing villages will offset demand for park resources, and in particular firewood. Much of the wood currently used in the fishing villages for building comes from outside the park, and is largely exotic in origin. In addition, prevailing arrangements for fuelwood harvesting appear to be durable, largely self-regulating, convenient for harvesters, consumers and local law enforcement officers alike, and exert a minimal impact on the overall vegetation ecology of the park as a whole.
- The benefits from the project have been inequitably distributed, partly due to the complex and largely unresolved issue of land tenure, as well as the approach adopted by the project of participant self-selection. The households with the greatest need for firewood (the poorer households) were those least able to hire casual labour or invest in the land clearance and planting process, and were unwittingly excluded from the project. Due to domination by men in the decision making process, species selection and end use has tended to focus on species with a cash value for building poles, rather than on species of value to women.

To avoid such problems, the paper calls for similar projects to ensure iterative design processes, undertaken over extended timeframes, developed in collaboration with major partners and stakeholders and based upon the lessons of the past. In addition, it is stressed that where projects involve work on the relationships of local people with protected areas, hypotheses and assumptions made concerning anticipated conservation-development linkages are clearly spelled out, monitored and evaluated during the life of the project.

Woodlots, Woodfuel and Wildlife: Lessons from Queen Elizabeth National Park, Uganda

Tom Blomley

Introduction

Many integrated conservation and development projects aimed at addressing human impacts on protected areas in developing countries use strategies of 'resource substitution', where alternative sources of products obtained from protected areas (such as firewood and building poles) are encouraged through their production on-farm. In this paper, the experiences of such an approach in Queen Elizabeth National Park in Uganda show how without a deep understanding of the full socio-economic conditions of the communities impacting upon the protected area, such solutions can be ineffective, or can even exacerbate the problem.

The origins of the 'fishing village problem'

Queen Elizabeth National Park in south western Uganda is an area of high biodiversity and conservation value. In particular, the park is renowned for its profusion of bird life, associated with the wide variety of habitats. To date, the bird list for Queen Elizabeth National Park stands at over 550 species, and as such is the fourth longest of any protected area in the world (Uganda Wildlife Authority Planning Unit, 1999). In addition, the wetland area to the north of Lake George is the only site in Uganda to be designated as a Ramsar¹ site, due to its unique habitats for birds, including two listed as globally threatened.

The area currently occupied by the Queen Elizabeth National Park was previously a grazing area for local Basongora pastoralists. When British explorers Stanley and Lugard toured the area towards the end of last century, both reported the area to have been largely depopulated as a result of cattle raiding (from the Bunyoro and Buganda kingdoms) and epidemics of rinderpest and smallpox. The Basongora social economy could not recover from these events, and with the exception of remnant villages around the two lakes, the area was almost completely depopulated. Those who did remain were forced to turn to fishing. These events allowed the game populations to increase and vegetation to change significantly, and played an important role in determining the creation of the national park by the Protectorate administration. In 1906, the area to the north of Lake George was declared a Game Reserve, in order to prevent what some administrators believed to be unregulated hunting by Africans and Europeans and growing pressure for development of cotton and wheat production.

1 An international designation accorded to wetlands of global significance and value

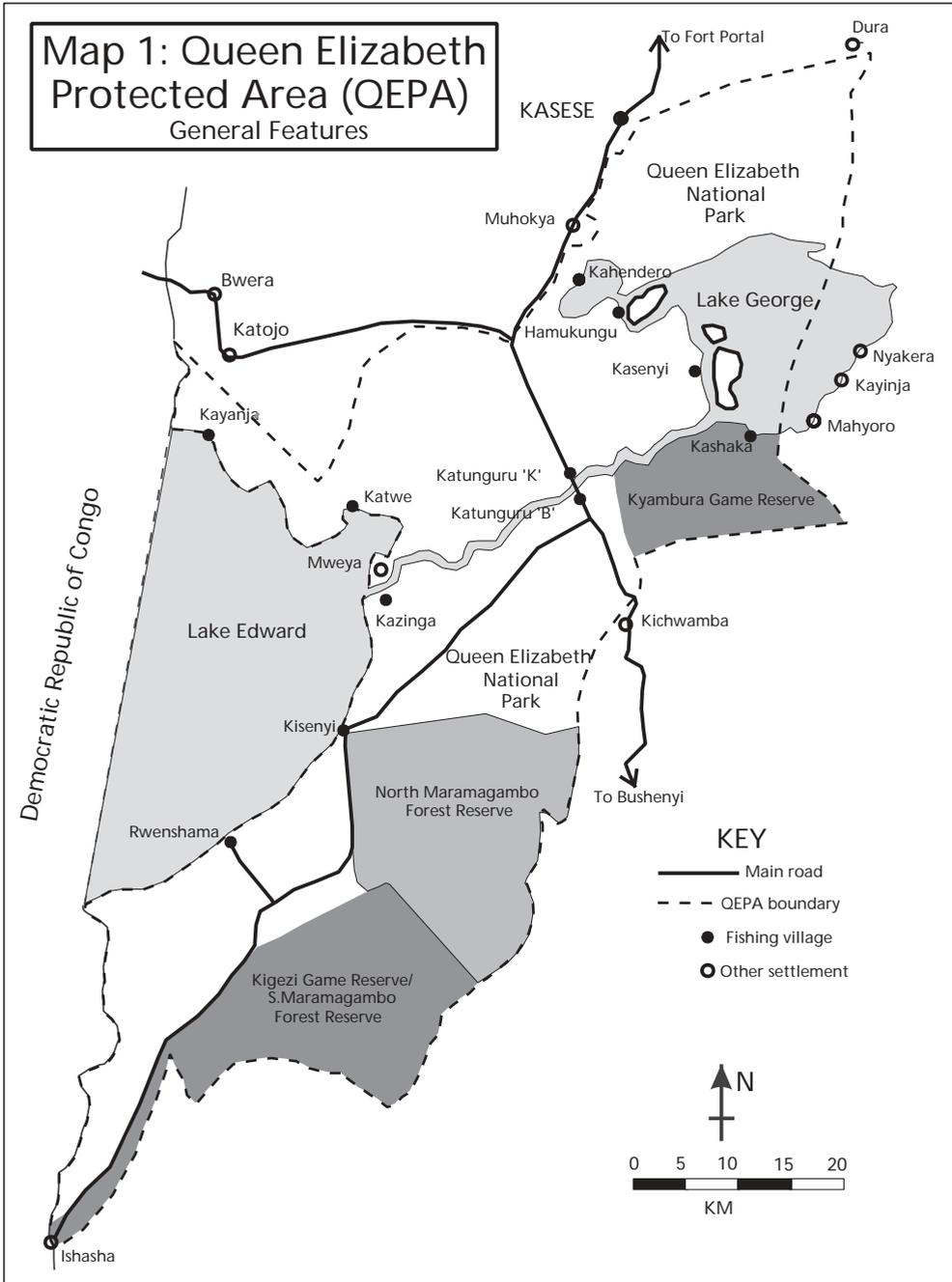
Pressure from the district administration may have eventually led to the degazettement of the game reserve in favour of agricultural development, had it not been for the first sleeping sickness epidemic that broke out in 1911. The protectorate government moved swiftly to evacuate the whole area, thereby limiting any plans to expand cotton and wheat production. By 1912, the whole of the Lake George and Ishasha areas were declared restricted areas, agricultural and fishing communities moved out to other non-affected areas and the area was largely abandoned. Further outbreaks of sleeping sickness continued up until the mid 1930s.

When the Lake George Game Reserve was created, it had several villages within its boundaries which were allowed to remain (subject to specific regulations), in recognition of the economic potential of fisheries in the area. Ten canoes were licensed at each of the six villages and fishing formed the main source of livelihood, although the communities were already socio-economically diverse and supported subsistence cultivation and small livestock grazing. Hamukungu and Katwe fishing villages (Map 1) were already recognised as villages on the King of Toro's estate.

The National Park Ordinance was passed on 31st March 1952 and Queen Elizabeth National Park was legally gazetted later that year, following intense lobbying by the Chief Game Warden of that time, Bruce Kinloch, and the Governor. As a result, the land area protected within the Lake George Game Reserve area was expanded considerably to include a large area to the east of Lake Edward and Kazinga Channel. Furthermore, the presence of the Lake Edward fishing villages was acknowledged by the park, in recognition of their key role in the local economy and the fact that they pre-dated the park's establishment (Risby 1999, in UWA, 1999).

From its inception, therefore, Queen Elizabeth National Park inherited a complex and particularly intractable set of problems, which collectively have become known as the 'fishing village problem'. However, from the outset it was the intention of the park authorities to ensure that the fishing villages maintained their essentially temporary nature, and did not evolve into more permanent settlements. For a number of reasons (including natural population growth, and the park's preoccupation with other priorities), these temporary fishing camps have tended to grow since the park's inception, and today they are of a completely different size and nature than when the park was established. Following the decentralisation laws brought into power by the Museveni government, local communities and townships have developed a significant degree of autonomy and independence. With this has inevitably come a political voice with which to oppose or counter any moves by the park authorities to restrict their growth, control their activities or undertake relocations.

Associated with these human settlements within the park are a range of activities which park management view as impinging directly upon the resources and overall integrity of the park. Perhaps the most visible, and contested, is that of firewood collection, used both for domestic energy, but also for smoking fish caught in the lake. Fish smoking is



a processing method used locally to reduce the high perishability of fresh fish, thereby allowing traders to penetrate distant urban markets such as Kampala or Kigali. In addition to firewood, there are a number of other activities which the park authorities assert

have a clear negative impact upon the integrity of the park. These include collecting poles and posts for construction, grazing livestock, burning pastures, encroachment into park territory for building or agricultural production purposes, and some illegal poaching. The opposing views, needs and activities of inhabitants of the fishing villages and those of park management, and the absence of any formalised mechanism with which to present and discuss these problems, have all combined to fuel the current level of distrust and alienation.

The CARE Fishing Villages Project: Conceptualisation and design

In 1993, CARE International began developing a proposal for a project which, working within the fishing villages, would seek to harmonise the conflicting needs of the park and those of the fishing communities. The project design team looked first at the very visible and oft-cited problem of fuelwood use from within the park, and the question of over-fishing in the lake. Following discussions with members of fishing village communities, it was found that there was both land and interest within the villages for planting woodlots, which it was asserted could be subsequently harvested to offset wood demand from within the park. Secondly, it was proposed that fish smoking kilns be introduced into the fishing villages, with the goal of reducing demands for firewood, and increasing the quality and shelf life of the final product. There appeared to be a clear financial incentive for adopting improved kilns, as fuel for fish smoking was generally purchased from local traders. Thirdly, it was proposed that the project should work with fishermen on the lake to develop sustainable fishing methods and practices. A project concept was consequently developed, founded upon the assumed link between these two strategies and the overall stated goal of conservation and development. Due to the short period of time provided for by the donor, and the drive to achieve physical results, the project's logical framework was largely directed towards achieving bio-physical targets. These included goals such as sustaining and restoring fishing yields, increasing fuelwood supply by planting trees in locally managed woodlots, and reducing firewood demand by promoting energy saving technology (domestic stoves and fish smoking kilns) (CARE Denmark, 1993).

Behind these proposed interventions were a number of implicit and explicit assumptions. For example, a key assumption (although not mentioned in the project document) was that trees planted on village land would be harvested for firewood and then ultimately offset some or all of the demand for fuelwood, currently met from park resources. The net result, it was implicitly assumed, would be greater self-sufficiency, reduced park utilisation, and ultimately improved park-people relations.

Due to prolonged negotiations over the budget and proposal content, the final project was reduced from a three year to a two year project, and a number of activities originally anticipated in the design were excluded. Despite these hurdles, the project was formally launched in January 1996.

Project implementation and results

As indicated in the pre-appraisal activities undertaken by the design team, the conditions necessary for establishing trees were in evidence. Land was available within village territory, people expressed a willingness to invest the labour and time in preparing ground and for establishing tree seedlings, and from the beginning, this component proved to be successful. There were a number of technical problems encountered relating to damage by wildlife, termite attack, and in some cases, lack of water, but in general these were overcome through management interventions jointly developed by the project beneficiaries and the project.

Although not clearly stated within the park statutes or bylaws, land within the fishing villages, beyond the limits of the home compounds, was generally agreed to belong to the community at large, and no one individual dominated access or control of land. At the outset of the project, community meetings were called, and interested individuals registered their willingness to take part. It was agreed that participating individuals would be allocated individual plots measuring five by five metres, and thereafter it would be their responsibility to plant and manage the trees. Individual plots were arranged within larger woodlots, towards which CARE provided limited assistance for fencing against wild animals.

One of the concerns raised during routine monitoring discussions with beneficiaries was the disparity between the heavy initial investment and the relatively long-term returns from the woodlots. A considerable amount of work was required to clear and prepare the land, weed the trees and protect the seedlings from attack by pests or wildlife, and until the trees matured, returns were negligible. A solution was proposed by the beneficiaries themselves, who suggested that during the stage of seedling establishment, vegetable crops could be inter-cropped with the growing trees. The benefits were clear: weeding of agricultural crops (and therefore trees as well) would lead to increased growth rates for the trees, and the likelihood of termite attack would be reduced. Participating households, and in particular women, would get access to the short term benefit of fresh vegetables which they otherwise would have to purchase from traders bringing in produce from outside the national park².

As the planted trees began to shade out the crops, some participants suggested that a solution would be to increase the spacing of the trees to allow for continuous inter-cropping. In some cases, it became apparent that some preferred to do away with the trees altogether, and requests mounted for people to be allowed to establish crop monocultures - a practice restricted by the bylaws of national park.

Although CARE was able to assist villagers to protect their trees by proposing species that were not susceptible to termite attack or palatable to game, the trees (and associated crops) inevitably attracted wildlife. On a number of occasions, significant damage

2 Agricultural production within the fishing villages was not permitted under the statutes of the park

was done by marauding elephants and other large game. Villagers who previously had lived in relative peace with wildlife, soon began lobbying the park authorities to deal with this new problem. The park administration argued that it was under-equipped to deal with crop raiding and damage to tree seedlings, and that had people refrained from growing crops, as stipulated in the park regulations, damage to property would have been kept at its previously low levels.

Boundaries around the fishing villages are in many cases not clearly marked, and this has been a constant area of concern for both villagers and park authorities (Olivier, 1990, CARE Uganda, 1998). Of the 11 villages within the park, only five have legally defined boundaries³. However, for some of the more opportunistic residents of these communities, this lack of clarity represented an opportunity to lay claim to land in an area of contention⁴. The park management, concerned about encroachment into park territory, was in many cases either unwilling or unable to contest the action. Again, however, the net result of these developments was that by introducing trees into fishing villages, CARE had quite unwittingly tended to increase levels of tension between the park and local residents.

Whose trees?

Land tenure in the fishing village enclaves is complex and highly contested. According to records obtained from Uganda Wildlife Authority, only four of the 11 villages are registered as public enclaves and are legally excised from the park. Land within the remaining seven villages (where trees have also been planted) has been allocated to the communities by the Chief Park Warden, but no written documentation could be found. The question, therefore, of legal ownership of the planted trees in these areas (although verbally agreed by all parties) remains unresolved.

Within the fishing villages that undertook woodlot activities, allocation of land to tree planting appears to have taken place on a rather *ad hoc*, 'first-come first-served' basis. Given the emphasis placed by the donor on achieving tangible and measurable results within a relatively short time span, there appears to have been little attention given to addressing or overcoming any of the potential barriers to participation by more marginalised sections of the population. A preliminary survey of participation undertaken by the project, disaggregated by gender and socio-economic status appears to reveal a number of issues relating to the primary beneficiaries of the project. These are discussed below.

Wealth

Based on simple criteria of wealth (or vulnerability) proposed by a cross section of community members within four sampled fishing villages, a wealth ranking exercise

³ Statutory Instrument No. 226-11(a)-(d) of 1964 Hamakungu Estates Grant no. G25254

⁴ Planting trees is a common way to claim unoccupied land in Uganda.

was undertaken which divided all households into one of three categories⁵. Following this exercise, households participating in the woodlot programme were similarly placed, and the results are presented below in Table 1.

Table 1. Wealth category characteristics of participating individuals in woodlot programme as compared with population at large. Note: wealth categories were defined through selected indicators defined by residents of each village. Source: CARE Uganda 1999.

	Most secure	Secure	Most insecure
Distribution of wealth within four sampled villages (Total number: 616 households)	11% (68 households)	58% (357 households)	31% (191 households)
Distribution of wealth categories amongst participating households within four sampled villages. (Total number of households participating in woodlot programme within four sampled villages: 140 households)	27% (38 households)	59% (83 households)	14% (19 households)

The results show fairly clearly that using an approach of ‘unsolicited enrolment’ (or self-selection), participation has tended to be dominated by the more wealthy members of the community, while poorer members are under-represented. When probing further reasons for non-participation, a common response was that they did not have the labour available to participate in the programme. Some mentioned that those who had benefited most were able to hire casual labour to undertake the demanding work of land clearance and weeding. In a few cases, these more wealthy individuals, by virtue of their access to casual labour, have been able to occupy large portions of the limited available space, thereby restricting potential future participation of other community members. Furthermore, it is clear that poorer households are more likely to use firewood as a principal energy source (as opposed to more wealthy households, who tend to use alternatives such as charcoal, kerosene or gas).

5 These criteria were worked out by groups of residents on a village by village basis, and included variables such as: ownership of registered boats, type of building material used to construct their dwelling, proportion of children in full time schooling, number of small and large domestic stock, and so on. Revealingly, in one village one unsolicited criterion was access to land for agricultural/tree production (CARE Uganda, 1999).

Although the project at its outset stated that it intended to work primarily with “resource-poor households” (CARE Denmark, 1993), project interventions have tended to unwittingly bias benefits towards more wealthy household members.

Gender

An initial analysis of participation by sex shows that participation levels are relatively well reflected in the overall sex ratio for the sampled population. The CARE project provided guidance on species selection, tending to recommend trees that are relatively resistant to water stress, can withstand pest attacks (and in particular termites) and are suitable for firewood. However, the final decision about the type of trees to be planted was taken by the individuals themselves. Tree planting and species selection tends to be a male dominated activity in this part of Uganda, and consequently, women’s needs have tended to be given lower priority (Table 2), often reduced to left-overs such as off-cuts and branches. This is despite the fact that women appear to have done a lot of the work in implementing the programme. Given that male priorities tend to be towards species that can generate income (as opposed to domestic needs, such as firewood), the most common tree species selected have been those with commercial value. In many cases, *Eucalyptus* has been preferred due to its clear commercial value (for building and construction) and rapid growth rates.

	What species will be planted?	What will trees be used for?	Will trees be sold or kept for domestic use?
Men's decision	48%	40%	39%
Women's decision	30%	25%	23%
Joint decision	22%	35%	38%

Table 2. Gender roles in decision making about species selection and end use. Sample size: 48 households out of a total of 140 participating from four villages. Source: CARE Uganda, 1999

Will tree planting reduce demands for park resources?

The initial concept behind the woodlot programme was that trees would be planted and used for firewood, thereby offsetting demand for park resources, and relieving women of a taxing (and often risky) chore. Although the trees have yet to be harvested in any substantial numbers, initial signs are that given the commercial value of the trees planted, and the strong bias in favour of men regarding species selection and end use (Table 2), many of the trees will be used as poles for construction materials and sold within the respective villages. A casual inspection of much of the building materials used within the fishing villages shows that the majority of timber currently being used is of exotic origin (primarily *Eucalyptus* and *Cassia* species), produced by smallhold-

ers living outside the park. Consequently, the degree to which the use of woodlots will reduce demand for park resources is highly questionable.

Therefore although the trees planted by the project will address one of the needs for residents of the fishing villages – building materials and construction poles - providing a valuable source of income for participating households, which otherwise would not have been available to them, it is quite possible that in the rush to plant trees within the villages, the project will neither significantly reduce the cost of firewood collection to women (expressed in time, labour and risk), nor will it have any significant effect on the demand for park resources.

Understanding the dynamics and underlying factors behind resource utilisation

A five month collaborative study commissioned by CARE and undertaken by the Institute of Development Studies (University of Sussex) has shown clearly that demands for park resources (and therefore efforts to provide alternative or external substitutes) are complicated by what is described as “selective law enforcement”. The project, in its design, had assumed that domestic subsistence firewood demand is accounted for by individual collection by the users themselves, as is the case elsewhere in rural Uganda. The study revealed that this situation prevails only in certain cases and in certain fishing villages. Harvesting of park resources tends to be dominated by specialised groups of harvesters who derive a large amount of their income from resource use and have operated for a considerable period of time in this fashion. Over time, these groups (who range from firewood collectors, to charcoal burners, to pit sawyers and game hunters) have developed informal licensing arrangements with local park law enforcement officers.

An example is the firewood collectors of Kayanja fishing village on northern Lake Edward (see Map 1). They are made up of 20 low income women, who form an established group which has been operating for over 20 years, and who provide the population of Kayanja village with high quality *Acacia sieberiana* firewood for both domestic use and fish smoking. They operate (and continue to do so) under informal ‘licensing arrangements’ with local law enforcement officers, and the earnings from their trade represent about 65% of their income (Krätli and Swift, 2000).

Junior law enforcement officers placed within local communities face three problems:

- they come under extreme pressure from local residents to allow use of local resources
- they are often dependent upon the very same residents for supplies or food and
- their salaries are extremely low (and prior to structural changes were often not paid for months at a time).

In some senses, therefore, these widespread local arrangements regarding access to park resources represent a rational solution to what would otherwise be an unmanageable position for both local communities and law enforcement officers.

While project efforts to plant trees in Kayanja fishing village have been highly successful, the findings described above question the degree to which these trees will be used to reduce demand for park-sourced firewood. It is highly likely that due to the prevailing situation where high quality firewood is collected and made available to users at low cost, planted trees will be used for alternative purposes such as building poles or sale. Efforts to ensure that planted trees are used for firewood may well have a negative impact on reducing the incomes of the already vulnerable women who currently supply the village with firewood.

Learning from the past

Recent research work currently being undertaken by Cambridge University on the history of people-park conflicts around the Queen Elizabeth National Park, has shown that firstly, these problems are by no means a recent occurrence, and that secondly, since the establishment of the protected area, a number of initiatives have been attempted, which have sought to address the fishing village 'problem' (Risby, pers. comm.). Perhaps of greatest interest to this paper are efforts as early as the 1950s to plant trees within the fishing villages. In a letter from a former Chief Park Warden of Queen Elizabeth National Park, Captain Frank Poppleton, to the incoming Warden, Captain John Paige, on 2nd December 1960⁶, the following appears:

"I must point out that there have been various attempts by the Parks and Forest Department to solve these [fishing village firewood] problems, but with little success, due mainly to disturbance from animals, unsuitable soil conditions, and serious drought conditions not to mention the general apathy of the local inhabitants to caring and tending young seedlings"

This revealing excerpt underlines the need to spend time learning from the experiences of past initiatives.

A second and critically important point to emerge from a review of historical records is the apparent increase in woody biomass in the Queen Elizabeth National Park since its formation over 50 years ago. A review of aerial photographs taken of the park in 1958 and 1990 shows a significant increase in woody biomass in many areas of the park, and most notably in areas around fishing village settlements such as Kayanja. This increase in vegetation can be accounted for by the drastic decline in the elephant population due to uncontrolled poaching from 1972 until the early 1980s when law and order was restored under the National Resistance Movement. This key finding calls into question the whole basis and rationale of the project in the first place and would clearly suggest that human pressure for woody resources over the past 50 years has not significantly contributed to negative changes in the park's ecology.

⁶ File No: res/1/88/fp/ea - Queen Elizabeth National Park Records, Mweya.

The way ahead: the search for a compromise

Following a somewhat critical but constructive external evaluation of the two-year pilot phase, the project has chosen to change its course radically and as from June 1998, entered a phase of protracted planning in collaboration with major project partners. The output of the 16-month bridging phase has been a comprehensive five year project document, prepared with the participation of major stakeholders, based on a solid understanding of the existing socio-economic, institutional, environmental and policy context. The focus of the project has changed substantially, away from a narrow resource-driven perspective, to one which seeks to address some of the deeper and more structural issues behind people-park conflicts. The project document presents a vision, based on a collaborative management framework, where local people, local government and the protected area authorities share responsibility for management of natural resources in and around the Queen Elizabeth National Park.

One of the key elements of this bridging phase has been to support Uganda Wildlife Authority in the preparation of a 10-year general management plan for the park. CARE's role in this process has been essentially that of advocate. Through a process of consultation from the village up to the district level, community concerns and priorities have been fed directly into the planning process, and strategies jointly developed with the Uganda Wildlife Authority for addressing them over the forthcoming decade (Uganda Wildlife Authority Planning Unit, 1999). The output of this process is not only the foundation for activities for the Queen Elizabeth National Park administration, but also provides clear directions for the second phase of CARE's project.

Conclusions and implications

The objectives of the woodlot programme were to provide firewood for domestic and fish smoking purposes, whilst reducing demand for firewood obtained from within the park. The initial results of the tree planting programme appear to be impressive. Despite the harsh local conditions, attacks from pests, termites and wildlife, the project has been able to assist in the establishment of over 100,000 trees within 17 woodlots in 13 fishing communities (CARE Denmark, 1998). A total of almost 1,400 individuals (including 650 women) have participated directly in the project, either through adoption of improved stoves, or through establishment of trees within woodlots. However, looking beyond the physical outputs of the project's pilot phase calls into question the extent to which either of the objectives has been achieved:

- The establishment of trees within the fishing villages may have in some cases accentuated (rather than decreased) levels of conflict between the residents of these communities and the park authorities. There appears to be increased damage of property by park animals, while encroachment of occupied land into park territory has in some cases been hotly contested by the park authority. The park clearly views moves by

villagers to establish woodlots as a means to cement and (in some cases) extend their land tenure rights within the protected area.

- There is some doubt over the degree to which the trees planted within fishing villages will offset demand for park resources, and in particular firewood. Much of the wood currently used in the fishing villages for building comes from outside the park, and is largely exotic in origin. In addition, prevailing arrangements for fuelwood harvesting appear to be durable, largely self regulating, convenient for harvesters, consumers and local law enforcement officers alike, and exerts a minimal impact on the overall vegetation ecology of the park as a whole.
- The benefits from the project have been inequitably distributed, partly due to the complex and largely unresolved issue of land tenure, as well as the approach adopted by the project of participant self-selection. The households with the greatest need for firewood (the poorer households) were those least able to hire casual labour or invest in the land clearance and planting process, and were unwittingly excluded from the project. Due to domination by men in the decision making process, species selection and end use has tended to focus on species such as *Eucalyptus* with a cash value for building poles, rather than on species of value to women.

These experiences suggest a number of implications for project design and approach. Projects working around protected areas seeking to reduce demands for natural resources by surrounding communities, must look beyond simple models of 'resource substitution' (ie: reducing demand and developing alternative supply sources), and invest the time necessary to analyse and understand the dynamics of park dependencies (ie flows of people going in, and resources going out of the park). This case study has shown clearly that it is not enough to assume that production of alternative supplies of resources outside protected areas (such as woodlot establishment for firewood), can offset or reduce legal or illegal demands for protected area resources. Instead, it is necessary to analyse the complex gender and tenure relationships surrounding ownership, management and access to natural resources (both within and outside protected areas), as well as the motives underlying resource utilisation. Project interventions should take account of these factors and respond to these complex challenges.

This case study has illustrated the very real risks (and associated costs) associated with acting on incomplete information and poorly tested assumptions. Donors, projects and implementing agencies with an interest in addressing and mitigating conflicts between protected areas and surrounding populations must be prepared to invest sufficient time in an analysis of local environmental, ecological, social and institutional conditions before embarking on full scale interventions. In particular, the linkages between development outputs (such as planting trees in areas around protected areas) and the associated conservation benefits (a reduction in demand for park resources and an associated positive ecological impact) need to be spelt out in the project design and continuously monitored over the course of the project.

References

CARE Denmark. 1998. *Evaluation Report. Queen Elizabeth National Park Fishing Villages Project, Phase I*. Unpublished report. CARE, Denmark.

CARE Denmark. 1993. *Appraisal Report and Project Proposal – Queen Elizabeth National Park Conservation Project*. Unpublished report. CARE, Denmark.

CARE Uganda, 1999. *Impact Assessment of the Queen Elizabeth National Park Fishing Villages Project*. Unpublished report. CARE, Uganda.

CARE Uganda, 1998. *Problems and Concerns Emerging from Districts and Communities in and Around Queen Elizabeth National Park*. Unpublished report. CARE, Uganda.

Infield, M. 1989. *Socio-economic Survey in the Queen Elizabeth National Park, Uganda*. Agriconsulting, Rome.

Krätli, S and Swift, J. 2000. *Livelihood Security and the Use of Natural Resources in and Around Queen Elizabeth Protected Area, Uganda*. Institute of Development Studies, University of Sussex, UK

Olivier, R. 1990. *The Queen Elizabeth National Park General Management Plan. 1990-1995*. Uganda National Parks, Kampala, Uganda.

Risby, L. 1999. *Administrative History: An overview of the history of Queen Elizabeth National Park*. Appendix 14 in Uganda Wildlife Authority Planning Unit, Queen Elizabeth National Park, Chambura Wildlife Reserve and Kigezi Wildlife Reserve General Management Plan and Environmental Impact Assessment. Uganda Wildlife Authority, Kampala, Uganda (in press)

Uganda Wildlife Authority Planning Unit. 1999. *Queen Elizabeth National Park, Chambura Wildlife Reserve and Kigezi Wildlife Reserve General Management Plan and Environmental Impact Assessment*. Uganda Wildlife Authority, Kampala, Uganda (in press)

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