



Breaking the law? Illegal livelihoods from a Protected Area in Uganda

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ABSTRACT

Forests are important to local livelihoods and regulating access to forests will have consequences to those livelihoods and may promote illegal harvesting. This study analyses how local people make a living, focusing on the illegal collection of a forest's resources following its declaration as a Protected Area (PA). A household survey was conducted between October and December 2005, combining semi-structured individual household interviews and village level focus group discussions. Six sub-counties bordering the Rwenzori Mountain National Park in Uganda were chosen at random and two sample villages randomly selected from each. Through a participatory wealth ranking exercise, all the individual households in each sample village were assigned to one of three categories: rich, medium or poor. From this stratified list five individual households were randomly selected from each category for semi-structured interviews. Household livelihood outcomes were assessed and a fractional logit regression was used to estimate factors influencing dependency on forest income. Households with less access to assets exhibited greater dependence on forest resources. The average household was poor with a per adult equivalent unit income of 0.5 USD/day, with 18.6% of their income being derived from environmental resources. Based on income per adult equivalent unit, households were divided into poor and less poor. Both categories reported illegal collection of forest products. The poor households derived 32% of their environmental income and 12% of their total income from the park compared to the less poor at 18% and 4.5% respectively. The park resources reduced income inequality, as well as the incidence and depth of poverty by 2.8, 3.0, and 5.0 percentage points, respectively. Small reductions in the incidence of poverty suggest that forest resources may not be reliable as a pathway out of poverty, but the poverty depth measure shows that forest resources have a significant impact on helping to make the poor less poor. Under such circumstances, our observation is that increased law enforcement alone is unlikely to protect the park. Interventions that allow managed access to these resources in the short term, whilst creating operational opportunities outside the areas to cater for local peoples' rights and needs in the longer term may be more suitable.

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1. Introduction

Forests provide both indirect non-use and direct use benefits. Access to forest resources is an important source of livelihood that provides cash or subsistence income to residents of rural areas (Babulo et al., 2008; Fisher, 2004; Mamo et al., 2007; Naughton-Treves et al., 2005; Vedeld et al., 2007). Forest resources may be used on a regular basis, particularly by individuals living within the forested areas, if not as a primary livelihood option, then as a supplement that may yield even more than agricultural production (Shackleton et al., 2001). Alternatively, such resources may be drawn upon seasonally to fill gaps created by inadequacies in other preferred sources of

livelihood, or only as a safety net in case of emergencies such as long drought spells or famine amongst forest neighbours (Takasaki et al., 2001). Rent derived in this way through the direct utilisation or sale of a product of nature by the individual who first collects the product, is referred to as "environmental income" (EI) (Vedeld et al., 2004). Many of the world's poor live adjacent to forested areas and depend on EI from these areas (Kaimowitz, 2003; Sunderlin et al., 2005; Vedeld et al., 2004; World Bank, 2002).

A World Bank meta-study (Vedeld et al., 2007) has shown that dependence on EI varies between cases, but is nevertheless generally significant to livelihoods. EI is especially important for the most marginalised and often highly vulnerable members of society (Beck and Nesmith, 2001; Cavendish, 2000), many of whom live at the margins of the cash economy deriving most, and in some cases, all of their cash requirements from EI (Arnold and Townson, 1998). However, although EI has a central role amongst marginalised households especially in relative terms, in some instances its importance, especially in absolute terms, has been found to be even

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higher amongst more well-off households (Vedeld et al., 2004). The actual household access to and use of EI thus varies (Kepe, 2002).

As the amount of land under protection continues to increase exponentially (Naughton-Treves et al., 2005) and more agitation is apparent for a return to the fortress approach (Hutton et al., 2005) that regards the collection of forest resources from Protected Areas (PAs) as illegal, it becomes important to investigate how local people cope with such limitations.

Managers of PAs and researchers concur that in many cases, local people continue to derive “illegal livelihoods” by clandestinely collecting forest resources from Protected Areas (PAs). For example, sale of illegally harvested timber is a major source of household income to rural households adjacent Ugandan forest reserves (Jagger, 2008). Most treatises of clandestine collection have addressed commercial collection (Brack, 2003; Dudley, 2002), mainly by people from outside the rural communities, but local collection can be equally important, especially where the PAs have resources valued for subsistence or where there is a limited supply of alternatives outside the PAs (Heinen, 1993).

Conservationists argue that wild areas and the resident biodiversity are essential for the maintenance of both ecological and human health. This is regarded as a common good which provides a legal basis for banning the harvesting of resources from areas that are protected for the preservation and sustainability of wilderness (Kramer et al., 1997). In Uganda, a wildlife authority was established in 1996 to oversee the establishment and maintenance of PAs. This followed the conversion of six forest reserves, including Rwenzori Mountain National Park (Rwenzori MNP), to national parks and the consequential ban on extractive uses of resources therein. Given the traditional local value of these forest resources, a challenge for local and international partner institutions is how to provide for economic utilisation of these forests without compromising their ecological value. As research from elsewhere has suggested, local people's needs are a key consideration in PA management (Heinen and Mehta, 1999).

Amongst other things, as we show in this paper, it is essential to recognise the existence and local importance of the clandestine collection of resources from PAs where formal access is not granted. Investigating the case of Rwenzori MNP, this paper examines:

- i. characteristics shared by rural households that depend on EI;
- ii. the groups of actors who depend most on the environment and thus are most affected by denied access;
- iii. the impact EI has on rural poverty and income inequality.

From an empirical perspective, the forest considered in this study is unique. Located within the Albertine Rift area (identified as a biodiversity hotspot by Conservation International, an endemic bird area by Birdlife International, and an Ecoregion by the World Wildlife Fund (Plumptre, 2002)) Rwenzori MNP is one of six Ugandan major forest reserves that were converted to national parks in the period from 1991 to 1993. Whilst other national parks have established collaborative management agreements (CMAs) with their neighbours to sustainably utilise park resources, by the time of this study, RMNP had not done so and the collection of park resources was done only clandestinely. Illegal resource extraction has contributed to a lack of resources in the park, which together with the 1997–2001 rebel occupation of the park led to the inclusion of this UNESCO world natural heritage site in a list of endangered sites in 1999. The end of the occupation led to the removal of the park from the list in 2004. To manage local resource extraction and use, CMAs were piloted in 2008 in the two parishes of Rubona and Kazingo, which happen to be part of our sample. This study thus provides an opportunity for comparison of the situation before and after the signing and implementation of CMAs.

Most EI studies have been conducted amongst local communities with some kind of recognised rights of access to PAs (Vedeld et al., 2004). This study thus compliments other EI studies by examining this

source of livelihood in a situation where it is considered to be an “illegal” means. We hypothesise that clandestine access, particularly for subsistence, is a feature of asset-poor households that do so out of necessity, as they are short of other options; we expect further that denied access to PAs sinks them further into poverty.

The paper applies an econometric method tailored to deal with variables limited by zero and one, including the margins. We use this method to examine the determinants of dependence on EI. EI is disaggregated into extractive uses from within and outside the park and referred to as “park environmental income” (PEI) and “non-park environmental income” (NPEI) respectively. Dependence can be defined in different ways, but given our objective of estimating the linkage between park and non-park environmental income, dependence is defined here by the contribution of PEI to both household total income (TI) and EI. We also examine the effect of EI and PEI on poverty, income inequality and household attitudes to inequality.

2. A brief review of literature

This study uses the livelihood framework and the household as the main unit of analysis is assumed to pursue a utility maximisation strategy. The choice of activities is partly determined by the household characteristics particularly access to own assets and partly by external factors such as restricted access to forest resources from a PA. For households in the vicinity of forest resources, a considerable share of non-farm activities is related to forest resource collection (Babulo et al., 2008; Fisher, 2004; Mamo et al., 2007; Vedeld et al., 2004).

2.1. Household characteristics and collection of forest resources

Amongst the main factors influencing the collection of forest resources is access to assets. Households with more assets may easily access more profitable livelihood activities and may give less priority to environmental and park resource incomes which are often considered “employment of the last resort”. They usually have lower returns on labour effort and are typically strenuous to acquire (Angelsen and Wunder, 2003). Households with less land access are more likely to depend on forest resources as their agricultural incomes often are lower (Swinton and Quiroz, 2003). Labour is important both in terms of its quantity and quality. With more education, households may access a broad variety of livelihood activities, have higher opportunity cost of time (Adhikari et al., 2004) and may disregard the collection of forest resources. Larger households may collect forest resources for two reasons: they have more labour to allocate to this activity, but may also be forced to do so by greater dependence and consumer burdens (Godoy et al., 1997). Men and women collect and control different resources (Agarwal, 1997; Leach, 1991). Also, the sex of the household head may shape household activity choice. Female-headed households may exhibit greater dependence on forest resources (Cavendish, 2000; Shackleton and Shackleton, 2006a,b), possibly because they often are poorer, have less access to adult labour (Vedeld et al., 2004), and may lack the means to seek employment away from their families (Shackleton and Shackleton, 2004).

However, more assets such as chainsaws, may lead to engagement in more remunerative forest activities. Also, as emerging evidence particularly from southern Africa (e.g. Shackleton and Shackleton, 2006a,b; Shackleton et al., 2007) reveals, returns per hour invested in forest activities may be higher than in available alternatives, in some cases even approximating an official minimum wage. In such cases, EI competes favourably with other livelihood options and is no longer an income of last resort. But, since EI based earnings tend to be erratic, as a general outcome their annual earnings tend to be dwarfed by those provided by other employment opportunities (Shackleton, 2005).

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