

Positive and negative conservation and livelihood impacts of wildlife trade regulation in the East Usambara Mountains

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Whilst the benefits of trade in forest products to livelihoods have been well documented, far less research attention has been given to the impacts on livelihoods or national economies of conservation-motivated trade controls. The threat that unsustainable wildlife trade poses to conservation has resulted in numerous wildlife access and trade regulations implemented in producing, transit and consumer countries. More recently, concerns have been raised that these conservation-based trade controls (and resulting changes in wildlife trade) are having a negative impact on the livelihoods of those earning an income as a result of wildlife harvests, especially the rural poor. In the worst scenario, these livelihood impacts may subsequently lead to inadvertent negative impacts on the very conservation objectives of the trade controls.

The report *'Making A Living: Wildlife trade, trade controls and rural livelihoods'* (obtainable from TRAFFIC) resulted from work conducted by the International Institute of Environment and Development (IIED) and TRAFFIC. In Tanzania, IIED and TRAFFIC collaborated with the Tanzania Forest Conservation Group to conduct a case study in five villages in the vicinity of Amani Nature Reserve and Mtai Forest Reserve in the East Usambara Mountains. This article serves to summarise findings from the study area regarding conservation, trade and livelihood impacts of wildlife trade interventions.

The study area is unique in terms of its biodiversity, local communities show a high degree of strong dependence upon the natural resources, and wildlife trade dynamics have been affected by numerous wildlife trade and access interventions. Using participatory techniques, research concentrated on the importance of wildlife resources; the significance of wildlife trade as a livelihood activity compared to other activities; and the impacts that resource use and trade restrictions have had on local livelihoods during the period from 1985 to 2001. Research focussed on wildlife products that are traded at local, national and international levels – timber, live animals for pet trade and dead invertebrates to specialist collectors.

The following are some major conservation-based interventions that have affected timber and live/dead animal trade dynamics in the East Usambara Mountains since 1985:

- 1986 - Temporary logging suspension via Administrative Order by Director of Forestry and Beekeeping
- 1987 - Logging from lowland forest at Kwamsambia ceased
- 1987 - East Usambara Mountains timber harvest ban
- 1989 - Pit-sawing ban in Amani Division
- 1990 - School Desk Concession permitting pit-sawing of trees felled before December 1990
- 1993 - Ban on national hardwood exports (Government Order), tree felling in catchment areas, riverbanks and valleys

- 1994 - Exports of Fischer's turaco *Tauraco fischeri* and brown-headed parrot *Poicephalus cryptoxanthus* banned
- 1994 - Revised national export quota system for live animals
- 1995 - Stricter airline company and importing countries' regulations for live animals
- 1997 - Amani Nature Reserve (ANR) gazetted
- 1998 - East Usambara Catchment Forest Project (FINNIDA assistance)
- 1999 - Increased timber license and permit fees

In summary, the following impacts have been recorded as a result of changes in trade dynamics and regulations:

Conservation impacts

- Little empirical evidence exists to show impacts of these regulations on the conservation status of species. Most biological surveys have been determining baseline -data only.
- Forest cover analyses show that large proportions of forest have been lost although recently the rate of forest loss has slowed.
- There is no evidence showing increasing volumes of harvestable, wild stands of commercially important timber species, although recent research indicates that the spread of exotic species is assisting the regeneration of indigenous timber species by creating the necessary shade.
- According to villagers, returning forest cover has led to increases in other forest animals such as hornbills and primates. Populations of Fischer's turaco have reportedly recovered to higher levels than 1995. The availability of chameleons, most other reptiles, amphibians and invertebrates have reportedly not changed since 1990.

Trade impacts

- *Volumes:* Volumes of timber traded have declined between 1985 and 2001. For example, using estimations of weekly sales at different times of the year, one village reported approximately 41,600 planks sold in 1990 compared to only 3,640 in 2000. Sales patterns of live/dead animals in the East Usambara Mountains closely match national export patterns, with both local trade and export volumes peaking in the mid-1990s. Bird sales from the East Usambara Mountains almost completely ceased after 1995, the same year that amphibians started to be traded.
- *Availability:* Timber species that have declined most in availability were the most exploited species during the 1980s and 1990s. With the exception of Fischer's Turaco *Tauraco fischeri*, trade dynamics do not seem to have been affected by changes in availability. Instead, regulatory and market changes have had the greatest impact.

- *Species:* In 1985, there was a close positive relationship between timber trade volumes and species value/price, although some lower value species are now traded in relatively high volumes. Previously undesirable tree species have also entered trade during recent years, including fruit trees. The number of live/dead animal species and classes traded has increased since 1990.
- *Prices:* The relative price of different timber and live/dead animal species has changed little between 1985 and 2001. Average timber prices have changed little in US\$ terms between 1990 and 2001, whilst live/dead animal prices have declined.

Financial impacts

- After large-scale commercial logging ceased in the mid-1980s, more local communities seemed to benefit financially in the short-term as they took advantage of direct access to the timber reserves and urban markets – albeit illegal in many cases. Previously, many outsiders were often brought in as cutters and carriers and there was limited scope for local people to be involved.
- Over the longer term, negative financial impacts to the communities living in the East Usambara Mountains have been caused by a combination of factors, including lower overall volumes of timber sold, a decrease in the number of people involved in timber trade, lower overall village incomes from the timber trade, a higher proportion of cheap timber species in trade, and both decreased size and quality of planks.
- Average incomes for timber traders in one village are currently US\$ 426 per capita, down from US\$ 10,557 in 1985. Similarly, average incomes for timber traders from another village have declined from US\$ 2,044 in 1990 to US\$ 173 per capita. Collective village incomes from the timber trade declined by 98% per cent and 88% per cent for these villages respectively.
- With respect to live/dead animals, villages in the East Usambara Mountains inadvertently benefited during the mid-1990s as market dynamics shifted demand from birds to many species of reptile and amphibian found in the area.
- Price declines, reduced demands in some species and access restrictions have caused profits to fall further since 1995. In one village, the average income from the trade in live and dead animals declined from US\$ 830 per capita in 1995 to just US\$ 125 in 1998. At less than a quarter of the average household income, this led to many traders - both middlemen and collectors - stopping the trade altogether in 1998 and 1999. The number of traders has declined by two-thirds between 1995 and 1998, and collective village income from the live/dead animal trades has decreased by 95% per cent.

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- Decreases in profits are reported to have heavily impacted collective money circulation and village tax revenues.

Non-financial impacts

- Following the timber trade harvest and export bans, there has been increased rainfall and available water as a result of regeneration of the forest. During the intense logging of the 1970 and 1980s, the montane forests were severely degraded, impacting on local climatic conditions. Whereas previously there had been three agricultural seasons coinciding with rainfall patterns, this had been reduced to two and the timing and duration of the rains had altered. In recent years, villagers noted that the agricultural seasons were gradually returning to normal and so food production had increased.
- Other positive, non-financial impacts include community organisations, greater conservation education and awareness on farming techniques, tree planting and energy-saving stoves; improved road conditions due to fewer heavy timber lorries; and benefits associated from the ANR including village income from tourism revenues and improved communications.
- On the other hand, reduced employment, market access and, business opportunities have reduced individual and collective incomes with knock-on effects on their and earnings have all resulted from changes in trade and access regulations, which in turn has had knock-on effects on ability to pay for other

services and to provide important livelihood components, for example, purchasing medicines, paying school fees and purchasing land and housing materials.

- Trade-offs exist for many livelihood impacts. Whilst reduced forest loss has benefited agricultural output, villagers also noted that linked to the regeneration of the forest was an increase in wildlife and a subsequent increase in problem (crop raiding) animals – particularly baboons. Similarly while villagers complain that they can no longer access or afford timber for construction, they also note that as a result they have learned to build better, superior houses from bricks.

Experience from the East Usambara Mountains in Tanzania clearly shows a mixture of positive and negative monetary and non-monetary impacts resulting from changes to wildlife access and trade regulations at local, national and international levels. It is also evident that regulatory measures have varying impacts on different sectors of society due to the different roles in the wildlife trade played by the rich and poor, women, men, elders and youth. Men are most affected by regulations on the timber trade and youth most affected by regulations on the trade in wild animals. According to local perceptions, wildlife access and harvest regulations have had a greater overall impact than national and international trade controls. Further, evidence suggests that some trade regulations have actually led to significant positive impacts on local livelihoods, whilst

subsequent wildlife access regulations have caused the most negative impacts. Overall, wildlife access and trade restrictions in the East Usambara Mountains have had a significant financial effect on local people. Market demand, access, local control and business acumen were major factors influencing rural peoples' susceptibility to wildlife access and trade regulation.

The study also showed how wildlife access and trade regulations not only cause varying degrees of livelihood impacts, but also produce both short-term and long-term effects. In some cases, there are short-term and long-term trade-offs in the effects of trade regulation. Thus, a wildlife regulation may result in a direct, immediate livelihood impact (positive or negative), which is felt for a relatively long time. Alternatively, the impact may be only temporary, or perhaps felt some time after the regulation is introduced. These temporal aspects are discussed in more depth in Miombo (No. 26).

By better understanding not only the values and importance of natural resources to rural communities, but also the associated short- and long-term conservation and livelihood impacts of interventions, decision-makers will be better placed to achieve synergy between conservation and development goals.