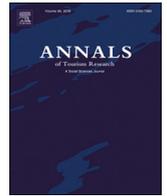




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Annals of Tourism Research

journal homepage: www.elsevier.com/locate/annals

Research Note

Tourism development in a biodiversity hotspot

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ARTICLE INFO

Associate editor: Scott McCabe

Introduction

In 2012, the New York Times ranked Tanzania the 7th preferred tourism destination in the world (NYT, 2012). Since the 1960s, tourism in Tanzania has focused on international markets (Curry, 1990), and today 80% of international visitors operate out of the northern gateway of Arusha when touring a northern tourism circuit of Serengeti and Kilimanjaro national parks and Ngorongoro Conservation Area (Mgonja, Sirima, & Mkumbo, 2015). As a result of a high expenditure-low density strategy that targets high-end clientele visiting that circuit, tourism is the country's primary source of foreign exchange (World Bank, 2015a). Yet, the national government set an objective of doubling the number of international visitors and increasing tourism revenues eight-fold by 2025 (World Bank, 2015b). To enable this increase, the Resilient Natural Resource Management for Tourism and Growth Project (REGROW)—a collaboration between the World Bank and Tanzanian Government (World Bank, 2017)—proposes a second tourism circuit be created to operate out of the southern city of Iringa. This circuit will link four protected areas: 1) Selous Game Reserve, the largest protected area in Africa; 2) Ruaha National Park, Tanzania's largest national park; 3) Mikumi National Park, a reserve reasonably accessible by vehicle from the nation's largest city, Dar es Salaam; and 4) Udzungwa Mountains National Park (UMNP), a distinct montane rainforest forming the main reserve in a region containing the highest rate of endemic biodiversity per unit area in the world (CEPF, 2012).

Targeted investment of US\$150 million from REGROW will improve road access, create additional ranger posts, train park and hospitality staff, and support other infrastructure development throughout the southern circuit. Given the scale of this investment, Tanzania's stature as an iconic tourism destination, and the dramatic social and environmental changes likely to result from the increased tourism visitation in this southern circuit, the purpose of this research note is to provide an on-the-ground perspective that alerts tourism researchers and policy-makers to likely outcomes of REGROW for tourism and biodiversity conservation at UMNP. This contribution will thus be of interest to scholars addressing broader issues of infrastructure-based development in tropical, biodiverse regions.

Conservation and communities

UMNP contains the largest remaining stand of forest in the Eastern Arc Mountains, which extend from southeastern Kenya to southern Tanzania and form part of the Eastern Afrotropical Biodiversity Hotspot (CEPF, 2012). The remarkable biodiversity in the Eastern Arc has led to the range being called the "Galapagos of Africa" (Iddi, 1998). Gazetted in 1992, UMNP harbors enormous plant

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<https://doi.org/10.1016/j.annals.2018.07.009>

Received 27 December 2017; Received in revised form 29 June 2018; Accepted 23 July 2018

Available online 23 August 2018

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and animal diversity, including many of the 96 vertebrate species and 37 tree species endemic or near endemic to the Udzungwa Mountains (Burgess et al., 2007). At least 118 species of mammals, including 12 species of primates, inhabit the park, along with elephants, leopards, cape buffalos, and lions (Rovero & De Luca, 2007). As a result of growing human pressures, conservationists call for urgent action to protect this biologically significant region (CEPF, 2012; Rovero, Mtui, Kitegile, & Nielsen, 2012).

Despite high levels of endemism and biodiversity, UMNP struggles to attract tourists. Only two lodges have a web presence and offer overnight accommodations suitable for most international tourists: Hondo Hondo Udzungwa Forest Tented Camp near the village of Mang'ula A, and Udzungwa Falls Lodge in Kidatu village. Additional lodging is available at the Twiga Hotel, Mountain Peak Hotel, and the Mountain View Hotel in Mang'ula B, and at the Mangabay Lodge in nearby Mwaya village. The park nevertheless recorded just 8918 visitors in 2015; of those, only 2608 were classified as non-resident visitors (World Bank, 2017). Day hikes to Sanje Waterfall, the tallest in Tanzania, is the most popular activity for international visitors. Dense forest, rugged landscape, and lack of roads inside the reserve hinder visitor access and wildlife viewing opportunities. Though a trail network exists, few international tourists visit UMNP, and those that do generate little economic activity in the local village economies. Remaining visitors, often consisting of Tanzanian school children, engage in interpretive nature walks and visit smaller Prince Barnard Waterfall near the park headquarters. These activities generate little revenue for the park. Thus, despite tourism's ability to support conservation elsewhere (Buckley, 2010; Fitzgerald & Stronza, 2016), limited visitation to UMNP results in little direct financial support for conserving the park's globally important biodiversity (World Bank, 2017).

The primary threat to the park's biodiversity originates in the subsistence needs of the 170,000 + residents living within 10 km of the park boundary, including 120,000 along the eastern edge of the park, most of whom are locked in poverty (Rovero et al., 2012). In the past, the area occupied by the park provided fuelwood and subsistence resources for residents in times of drought or market fluctuations (Harrison, 2006). Although some villagers view the nascent tourism as a welcome activity due to the anticipated increase in local economic activity, others do not see tourism as beneficial now or in the future, and there remains little awareness about what market-, infrastructure-, and service-related factors are necessary for successful tourism (Harrison, 2006). REGROW specifically aims to overcome infrastructural and logistical challenges to increase visitation to UMNP.

Methods

We draw on ongoing interdisciplinary research in nine villages near UMNP. In 2012, the second author initiated both spatial and survey research on resource flows into and out of these villages to understand local residents' level of dependency on materials that could affect biodiversity in the park. The first author joined this project in 2015. Data come from villages in varying environmental and economic settings on the eastern, southern, and northern sides of the park, including two identified by the World Bank as priorities for support from REGROW: Msosa (northern edge of UMNP) and Mang'ula B (eastern edge). In each community, our assessments examined a random sample of households with a household income-expenditure survey (HIES) to obtain detailed information on individual village economies. In addition to two months that the authors spend in the field at UMNP annually, local research assistants gather HIES data throughout the year. HIESs have been completed in six villages and are currently underway in three more.

Prospects for Tourism-supported biodiversity conservation?

Although full analysis of our HIES data is just beginning, preliminary analysis and our own field observations suggest there is highly limited access to wages and activities that would generate cash in most of the households examined. Moreover, our data identify not a single household that reports tourism as a primary livelihood or source of income, placing UMNP at a *pre-tourism phase* of the destination life cycle (Hunt & Stronza, 2014). Although the World Bank and the Government of Tanzania assert that tourism will unlock the region's potential, projections from REGROW show annual visitation to UMNP increasing to just 12,000 over the course of the six-year project. Even if all these new visitors are international, this would total just 5690 foreign exchange-yielding visitors to UMNP annually. In comparison, similar analysis of World Bank (2017) projections for Mikumi and Ruaha National Parks indicate total international visitation could exceed 54,000 additional tourists by the end of the six-year REGROW initiative.

As Fitzgerald and Stronza note, "At the scales where conservation is most needed, the negative effects of tourism are less severe than bush-meat hunting, the wildlife trade, logging, invasive species, and habitat conversion for agriculture, roads, and dams" (2016, p. 95). Low visitation at UMNP will continue to make it difficult for tourism benefits to overcome the adverse extractive impacts on biodiversity that are likely to accompany new roads, infrastructure, and increased in-migration to the area due to such improvements. At the core of concerns about resource pressure is a massive anticipated growth in fuelwood demand from the UMNP area to support the commercialization of charcoal for more distant yet soon-to-be increasingly accessible markets in Dar es Salaam (Rovero et al., 2012).

Given REGROW's projections, it does not appear that tourism will develop at UMNP to levels that offset the growing ancillary impacts that are already threatening biodiversity in the park. The hope for protecting the globally significant biodiversity in UMNP thus rests on the ability of REGROW to increase visitation to the three other safari-based reserves in Tanzania's southern circuit to a level where total revenue growth subsidizes UMNP's growing on-the-ground conservation needs. It will be especially important that additional revenues be generated by more than 54,000 international tourists projected to visit to Mikumi and Ruaha National Parks, both of which are administered by the same government agency as UMNP, the Tanzania National Parks Authority.

Conclusion

It has been 12 years since Hall noted, “the interrelationships between tourism and biodiversity are poorly understood in terms of empirical data” (Hall, 2006, p. 222). At UMNP, park staff are keen to generate more tourism to protect park resources from current and future threats. Yet, while REGROW’s projected increase in visitation may result in a meaningful impact on select households in the neighboring villages and also create indirect economic multiplier benefits, it is not likely that the projected visitation will generate sufficient revenues to meet on-the-ground biodiversity conservation monitoring and management needs at UMNP (Buckley, 2010). Nor will it create much in the way of meaningful social and economic impact for local communities (Curry, 1990; Hunt, Durham, Driscoll, & Honey, 2015). Although the fate of biodiversity at UMNP may indeed hang in the balance of increased visitation, it is not the meager projected increases in visitation to UMNP itself that will satisfy this need but rather increased visitation to other national parks in the REGROW region. This paper demonstrates that revenues generated from improved infrastructural access to popular wildlife tourism areas (e.g., safari tourism in Ruaha and Mikumi National Parks) are the best prospects for subsidizing the protection of lesser visited reserves housing globally significant endemic biodiversity, like UMNP.

Acknowledgements

Funding to support the research on which this note is based was provided by the University Office of Global Program at Penn State University and the Hamer Foundation, State College, PA. The authors would also like to acknowledge our research assistant Mohamed Kambi, as well as Francesco Rovero and the staff of the Udzungwa Ecological Monitoring Centre, in particular Arafat Mtui and Aggrey Uisso for their support of our activities in Tanzania.

References

- Buckley, R. (2010). *Conservation tourism*. Wallingford: CABI.
- Burgess, N. D., Butynski, T. M., Cordeiro, N. J., Daggart, N. H., Fjeldså, J., Howell, K. M., et al. (2007). The biological importance of the Eastern Arc Mountains of Tanzania and Kenya. *Biological Conservation*, 134(2), 209–231.
- CEPF (Critical Ecosystem Partnership Fund) (2012). *Ecosystem Profile: Eastern Afromontane Biodiversity Hotspot*. Arlington, VA: CEPF.
- Curry, S. (1990). Tourism development in Tanzania. *Annals of Tourism Research*, 17(1), 133–149.
- Fitzgerald, L. A., & Stronza, A. L. (2016). Defense of the ecotourism shield: A response to Geffroy et al. *Trends in Ecology & Evolution*, 31(2), 94–95.
- Hall, C. M. (2006). Tourism, biodiversity and global environmental change. In S. Gössling, & C. M. Hall (Eds.). *Tourism and global environmental change* (pp. 211–226). London: Routledge.
- Harrison, P. (2006). *Socio-economic baseline survey of villages adjacent to the Vidunda catchment area, bordering Udzungwa Mountains National Park*. Dar es Salaam: WWF Tanzania.
- Hunt, C. A., Durham, W. H., Driscoll, L., & Honey, M. (2015). Can ecotourism deliver real economic, social, and environmental benefits? A study of the Osa Peninsula, Costa Rica. *Journal of Sustainable Tourism*, 23(3), 339–357.
- Hunt, C., & Stronza, A. (2014). Stage-based tourism models and resident attitudes towards tourism in an emerging destination in the developing world. *Journal of Sustainable Tourism*, 22(2), 279–298.
- Iddi, S. (1998). Eastern Arc Mountains and their national and global importance. *Journal of East African Natural History*, 87(1), 19–26.
- Mgonja, J. T., Sirima, A., & Mkumbo, P. J. (2015). A review of ecotourism in Tanzania: Magnitude, challenges, and prospects for sustainability. *Journal of Ecotourism*, 14(2–3), 264–277.
- NYT. (2012). The 45 Places to Go in 2012. Accessible here: <http://www.nytimes.com/2012/01/08/travel/45-places-to-go-in-2012>.
- Rovero, F., & De Luca, D. W. (2007). Checklist of mammals of the Udzungwa Mountains of Tanzania. *Mammalia*, 71(1/2), 47–55.
- Rovero, F., Mtui, A. S., Kitegile, A. S., & Nielsen, M. R. (2012). Hunting or habitat degradation? Decline of primate populations in Udzungwa Mountains, Tanzania: An analysis of threats. *Biological Conservation*, 146(1), 89–96.
- World Bank (2015a). *Tanzania's tourism futures: Harnessing natural assets*. Washington, DC: World Bank Group.
- World Bank (2015b). *The Elephant in the Room: Unlocking the Potential of the Tourism Industry for Tanzanians*. World Bank Group (Africa Region Macroeconomics and Fiscal Management): Dar es Salaam.
- World Bank (2017). *Tanzania: Resilient Natural Resource Management for Tourism and Growth (REGROW)*. World Bank Group (Africa Region Macroeconomics and Fiscal Management): Dar es Salaam.