

The Value of Avitourism for Conservation and Job Creation – An Analysis from South Africa

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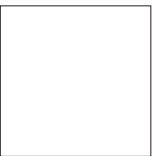
Abstract

Tourism directed at bird watching (avitourism) has become increasingly popular. In many lower and middle-income countries, including South Africa, avitourism is being applied in an effort to simultaneously achieve community development and biodiversity conservation. This paper presents the results of an exploratory investigation of 11 community-based avitourism projects in South Africa. Conservation benefits were measured with the Threat Reduction Assessment tool. We calculated the Gamma (G) correlation coefficient to explore the relationship between conservation and income benefits and project characteristics. The projects were successful at reducing threats to sites where conservation was an explicit objective ($n=11$, $G=0.609$, $P=0.03$). The level of income benefits did not correlate with success in reducing threats to conservation. Once involved in avitourism projects, the average monthly income earned by local bird guides increased from USD 114 to USD 362. The extent of income benefits was positively related to the extent of support to projects ($n=10$, $G=0.714$, $P=0.01$). Participants in the projects reported substantive capacity building and empowerment benefits. Success in delivering conservation, income and empowerment benefits was challenged by the local guide's limited previous exposure to tourism and business, the guide's lack of self assurance, cultural differences, and a requirement for sustained mentorship and support to overcome these barriers. We conclude that with adequate long-term support, avitourism projects can be a cost-effective way to create jobs and deliver conservation and human development benefits.

Keywords: nature-based tourism, ecotourism, avitourism, community-based conservation, poverty alleviation, job creation, skills development, bird watching, tour guides

INTRODUCTION

Bird watching or birding tourism (hereafter called avitourism) is a specialised sector of nature-based tourism focused explicitly on looking at birds. Bird watching has become an increasingly popular hobby, and its importance and value as a niche market in tourism is recognised (Cordell & Herbet 2002; Sekercioglu 2002; US Fish and Wildlife Service 2001, 2007; Naidoo & Adamowicz 2005b). Over the past two decades, avitourism has been increasingly promoted as a tool for achieving conservation and development outcomes,

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particularly in rural areas in lower and middle income countries (Hvenggaard & Dearden 1998; Naidoo & Adamowicz 2005a, b). Avitourism enables income generation through selecting and training local birding guides from low-income communities close to sites of conservation interest. These local guides are trained and encouraged to play an active role in local conservation and lead awareness activities in their communities (BirdLife South Africa 2009).

In this paper, we call this process community-based avitourism (CBAT), which is a form of community-based tourism. The notion of community-based tourism as a tool to achieve both conservation and development objectives has been in existence for over two decades (Murphy 1985; Walpole 1997; Bookbinder *et al.* 1998; Kiss 2004). Community-based tourism can provide livelihood security, minimise leakage from the local economy and strengthen conservation (Murphy 1985; Wilkinson 1989; de Kadt 1990; Drake 1991; Wells & Brandon 1992; Steele 1995). Overall, community-based tourism has delivered mixed results for conservation and local economic development (Kiss 2004). Successes have been limited to specific contexts in which there were favourable local conditions such as a strong local leader or organisation supporting ecotourism development. The type of tourism operation, the nature and degree of community involvement, and whether earnings become private income or are channelled into community projects, or other benefit-spreading mechanisms, are also important determinants of success (Kiss 2004). Furthermore, a lack of necessary skills, e.g., tourism, communication, business and marketing skills, often hamper the success of community-based tourism ventures (Spenceley 2008a).

Despite its increasing application, the success of CBAT in delivering conservation and income benefits, and factors that enable these benefits, have not been investigated in the academic literature. The primary author was involved in the development and management of CBAT in South Africa. The need to address this knowledge gap on avitourism inspired this exploratory analysis of 11 CBAT project sites in South Africa. Specifically, this paper aims to: 1) explore the biodiversity conservation and income benefits of CBAT, 2) gain insight into the project characteristics associated with conservation and income benefits, 3) explore the relationship between conservation and income benefits, 4) evaluate the cost-effectiveness of CBAT as a biodiversity-based approach for job creation, and 5) assess factors that can enable or impede the sustainability of CBAT initiatives.

The Context: Growing Avitourism in South Africa

The democratisation of South Africa, which culminated in the first multi-racial elections in 1994, led to the establishment of strong political and financial incentives for rural economic development, cost-effective job creation, and capacity building. Furthermore, and aligned with the international trend, conservationists became more aware of the critical need to ensure benefits to and the inclusive participation of local

communities in conservation (Brooks & Thompson 2001; Berkes 2004; Sanderson 2005). At the same time, the end of Apartheid-era sanctions led to a rapid increase in the number of foreign tourists visiting South Africa. Foreign tourist arrivals increased from 3.9 million in 1994 to 9.1 million in 2007 generating substantive economic benefits (South Africa.info 2009). Birding tourists were part of the increase as South Africa hosts a wide diversity of habitats, species and high levels of endemism. The only quantitative study to date on avitourism to South Africa conservatively estimated that by 1997 between 11,400 and 21,200 birdwatchers spent USD 12–26 million annually in the South African economy (Turpie & Ryan 1998). The rapid increase since 1997 in the number of birding-focused tourist establishments and the number of birding tours and products offered in South Africa suggests that these numbers have continued to increase over the past decade.

History and Evolution of Avitourism in South Africa: The BirdLife South Africa Model

The idea of training and developing local guides emerged around 1994, the year of South Africa's first democratic elections. Warwick Tarboton, an influential conservationist, bird watcher, and ornithological author started discussing his ideas for training local bird guides around his home base in Wakkerstroom. Wakkerstroom is situated in the Grassland Biosphere Reserve (Figure 1), which is considered one of the most important biodiversity areas in Africa and one of the top birding destinations in South Africa (Barnes 1998). In 1997, South Africa's first local bird guide course was held in Wakkerstroom funded by United Distillers, through a top manager in the company, Patrick Cardwell, also a well-known birder. The 1997 training course aimed at capacity building of individuals from the financially depressed black segment of the Wakkerstroom community as local bird guides. The training would provide individuals with an opportunity to earn an income and provide a stimulus for raising conservation awareness in Wakkerstroom's financially depressed black community. Following the 1997 course, the South African-based oil company SASOL expressed an interest in funding local bird guide training further. In 2000, with funding from Sappi WWF and SASOL the construction of the BirdLife South Africa training centre in Wakkerstroom was completed. The first training course at the new centre took place in September 2000.

The history and development of the Zululand Birding Route (ZBR) played an important role in advancing avitourism and CBAT initiatives in South Africa. A birding route is a type of tourism route that aims to cluster activities in less developed areas and stimulate cooperation and partnerships between communities in neighbouring regions to stimulate economic development through tourism (Briedenhann & Wickens 2004a). In South Africa, tourism routes are proposed as a strategy to synergise job creation, tourism and conservation. Starting in 1993, a group of birders around Eshowe, Kwazulu Natal, organised and ran birding weekends in the conservancies in the region. These weekends were popular and were a precursor to

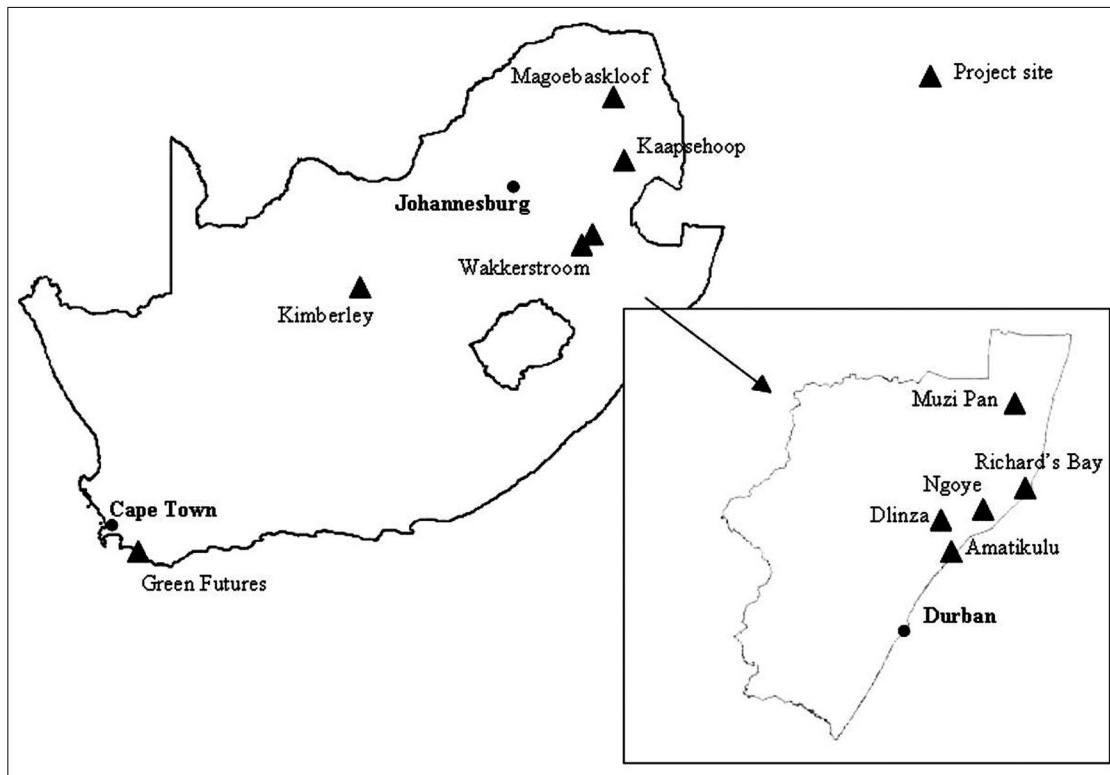


Figure 1

A map of South Africa showing the location of the study sites. The inset of Kwazulu Natal shows the location of sites on the Zululand Birding Route

the development of the Dlinza boardwalk in Eshowe and the ZBR. The ZBR's first brochures were published and distributed in 1997. By 1999, there was recognition that for the ZBR to continue to grow and develop, it needed to appoint a full time person. BirdLife South Africa's affiliation with BirdLife International enabled it to access funding opportunities through the Rio Tinto BirdLife International partnership to appoint a full time person for the ZBR in 2002. A stronger ZBR, which would provide marketing and coordination support to local guides would address the realised need for long-term mentorship beyond a two to four week training course.

The creation of the bird guide training centre in Wakkerstroom in 2000 expanded the awareness of the potential to train bird guides across a range of sites in South Africa. The Endangered Wildlife Trust's Blue Swallow Working Group initiated an economic feasibility study for the development of local birding guides at the Blue Swallow Natural Heritage Site at Kaapsehoop. The Blue Swallow Working Group, which by 2002 had a self-employed trained guide in place at Kaapsehoop, started training and developing a guide in the Magoebaskloof. The need for stronger marketing of the local guides and the destinations they were based at led to the development of BirdLife Travel in 2003. BirdLife Travel is a division of BirdLife South Africa which works closely with the ZBR to market and coordinate reservations for local guides. The Oppenheimer De Beers program, focussed on developing birding tourism and local guides at De Beers properties throughout South Africa, was initiated in 2003, as was a South

African National Lottery-funded guide development project based in Kimberley, in the Northern Cape Province. In 2004, BirdLife South Africa's avitourism projects were showcased at the BirdLife International World Conference in Durban. By this time, BirdLife South Africa had established an avitourism program, as an umbrella for the different CBAT projects that aimed to achieve the following objectives (BirdLife South Africa 2009):

1. Develop a network of birding routes through South Africa to create opportunities for local communities to become involved in the tourism economy and conservation.
2. Train and develop local guides that operate along the routes with a focus on developing skills and business opportunities for communities.
3. Develop partnerships along these routes that act as a support structure for conservation action, local guides and accredited tourism products.
4. Marketing avitourism in South Africa and providing a professional travel service to provide a link between local birding guides and potential clients.

Since 2004, spearheaded by the success of the ZBR, nine additional birding routes including the De Beers-linked Diamond Birding Route have been developed throughout South Africa.

METHODS

The Study Sites

The eleven projects evaluated in this study included all

Table 1
Projects included in this study

Project	No. of guides at time of fieldwork	First guide/s started work	Project actors, structures and additional notes
Dlinza Boardwalk, Eshowe (ZBR)	5	2001	A boardwalk management authority raised funding for the boardwalk's construction.
Muzi Pan (ZBR)	2	2002	Local community characterised by high levels of unemployment. Distant location over 100km from the ZBR office in Richard's Bay led to the local guides' perception of isolation. There was pre-existing conflict between the local community and KZN Wildlife who manage the adjoining Mkuze Game Reserve.
Richard's Bay (ZBR)	7	2002	Richard's Bay is the site of the ZBR coordinating office. The local Umhlatuze Municipality have supported the project through financial and site access support.
Ngoye Forest Reserve (ZBR)	1	2002	The Uthungulu District Municipality supported the development of birding tourism. At the time of field research the local guide was undertaking university studies and was no longer guiding locally. The forest was served by guides from other sites on the ZBR.
Amatikulu Nature Reserve (ZBR)	3	1999	In 1998, a local community development project first started training bird guides and a local bird club was started in 1999. By 2001, 15 local guides had been trained from the local community. Due to a low level of support and low tourist demand only three of the original guides remained at the site at the time of field research, four others moved to the Dlinza boardwalk.
Green Futures	12	2004	A partnership between Green Futures (NGO) and the Grootbos Private Nature Reserve. Individuals were selected and trained in conservation-focussed horticulture and in tourism. Subsequent to training, individuals either became active as guides and tourism workers with Grootbos Private Nature Reserve, or gained employment in horticulture and received continued support from Green Futures and Grootbos Private Nature Reserve.
Kimberley	5	2003	A project managed by BirdLife South Africa with 24 months of funding from the National Lottery Distribution Trust Fund of South Africa. The provincial Northern Cape Department of Environmental Affairs, Tourism and Conservation played an important on-site coordination and support role to the project which continued at a lower level after the initial funding ceased in July 2004.
Blue Swallow Natural Heritage Site, Kaapsehoop	1	2001	Project was preceded by an extensive study on the economic feasibility (Biggs 2001) which showed adequate economic demand for local guides and strong support from the primarily white local business owners and residents. Funded support to the project from BirdLife South Africa and the Endangered Wildlife Trust – Blue Swallow Working Group ended in 2003.
Magoebaskloof	1	2002	The local guide, Mr. Letsoalo, was a bird-watcher and naturalist of his own accord for six years prior to the project and had extensive previous exposure to western business norms. BirdLife South Africa and the Endangered Wildlife Trust – Blue Swallow Working Group provided ongoing mentoring and support for 18 months. Mr. Letsoalo gained employment through a partnership with a local tourist lodge which augmented his income.
Wakkerstroom – BirdLife South Africa local guides	2	2000	BirdLife South Africa employs local guides full time, with reservation support and coordination. When not guiding, the guides engage in other conservation-related work. At the time of field research one of the local guides had just joined a South African based international bird tourism company.
Wakkerstroom – Bell's guides	1	1997	The first avitourism project in South Africa which was funded by United Distillers and coordinated through the Wakkerstroom Natural Heritage Association. In 1997, seven local guides were trained but by the time of field research only one remained active due to limited longer term support to the local guides. Conflict was reported between the remaining Bell's guide and the BirdLife South Africa guides in Wakkerstroom.

of BirdLife South Africa's CBAT initiatives that had been operating for over two years at the time of field research in 2005 (Figure 1, Table 1). The projects in Kwazulu Natal (Table 1) were all part of the ZBR (a central marketing and coordination and training support unit and linked to a longer term partnership between Rio Tinto and BirdLife International), but each had their own particular set of birding attractions, and stakeholder groups and each project was treated as an independent site. A number of the project sites on the ZBR were nature reserves, or were adjacent to nature reserves managed by the provincial conservation agency in Kwazulu Natal, Ezemvelo KZN Wildlife—hereafter referred

to as KZN Wildlife. The non-ZBR projects were smaller and were managed by the Endangered Wildlife Trust's Blue Swallow Working Group and BirdLife South Africa (Table 1). The Green Futures project was a partnership between Green Futures (an NGO) and the Grootbos Private Nature Reserve, and trained individuals as guides and tourism workers as well as in horticulture.

Data Collection

The primary author conducted semi-structured interviews with local guides, project coordinators, and other tourism and

Table 2*The number of interviews per project site per data collection category*

Project	Threat Reduction Assessment	Project characteristics	Income
Dlinza Boardwalk, Eshowe	5	4	3
Muzi Pan	3	4	3
Richard's Bay	1	6	5
Ngoye Forest Reserve	2	3	1
Amatikulu Nature Reserve	1	5	4
Green Futures	1	8	8
Kimberley	2	9	7
Blue Swallow Natural Heritage Site, Kaapsehoop	2	3	2
Magoebaskloof	3	4	2
Wakkerstroom – BirdLife South Africa local guides	2	3	3
Wakkerstroom – Bell's guides	2	3	2
Total	24	52	40

conservation stakeholders at each project site. The interviews collected data on the conservation benefits, the local guides' income, and the characteristics of each project (Table 2). Interviews consisted of a fixed list of open-ended and Likert scale questions, but respondents could elaborate on particular topics if they chose to (Bernard 2002; Czaja & Blair 2005). The qualitative results from the interview process enabled a deeper understanding of the contexts of CBAT projects and the nuances that may lead to success or failure. Interviews were conducted between April 26, 2005 and July 13, 2005.

Conservation Benefits

The conservation benefits of each project were assessed through the Threat Reduction Assessment (TRA) tool (Salafsky & Margolius 1999) and through quantifying the extent of conservation awareness and action benefits at each project site. TRA measures the percentage reduction in identified threats to the conservation of a site as a result of project interventions. TRA is a practical and cost-effective way of measuring conservation benefit as it is directly related to project interventions and is based on data collected through simple techniques and can be done in retrospect (Salafsky & Margolius 1999; Mugisha & Jacobson 2004). TRA has a theoretical disadvantage in being a proxy measure for conservation, as it measures the reduction in threats to biodiversity and not biodiversity itself. We followed the TRA procedure as outlined by Salafsky and Margolius (1999). We conducted our TRA analysis through interviewing key conservation informants (members of government conservation agencies, and the avitourism project coordinators) at each project site. The first step in conducting our TRA analysis was for the interviewees to define the exact

spatial area of the project in question and to establish start and end dates for the assessment. Secondly, all the direct threats (i.e., threats that immediately affect the biodiversity of the site of interest such as poaching and habitat destruction), were identified. The direct threats were ranked according to spatial extent (the area affected by the threat), intensity (severity of the destruction caused by the threat) and urgency (i.e., is it a current threat or will it occur only in the future). The rankings for spatial extent, intensity and urgency were added to determine the total ranking of each direct threat. In the next step, the interviewees indicated the extent to which they perceived each threat had been reduced, judged against a benchmark of a definition of a 100% reduction of each threat. The total ranking for each threat was multiplied by the percentage reduction of that threat to calculate the total raw score (see Salafsky & Margolius 1999 for full methodological details). The final step was to divide the total raw score by the total ranking to calculate the TRA score or index. TRA scores were calculated with inputs from key conservation stakeholders including the avitourism project coordinator and other conservation stakeholders. In cases where a key informant for TRA scores clearly gave biased responses, scores were excluded from the final analysis.

Furthermore, interviewees were questioned on the extent of conservation action and awareness activities in communities that stemmed from the CBAT projects. The extent of conservation action was quantified as the total person-labour-days directed at conservation action. A person-labour-day is defined as the equivalent of eight hours of conservation-directed activity undertaken by one adult. Conservation action activities included the monitoring of bird species and numbers, patrolling conservation sites, clearing invasive alien species and clearing litter. Conservation awareness was measured by the number of people that participated in an awareness-raising event that stemmed from the CBAT projects. Conservation awareness events included presentations at community meetings, schools, churches, and school and community outings.

Income Benefits and Project Costs

The income benefits to local guides were measured as the increase in income generated due to avitourism projects. The primary author questioned local guides and project coordinators at each project site about the levels of income earned by the local guides and the number of local guides that gained part-time or full-time employment. Project reports and budgets were used to obtain information on project costs. Data on income were collected in South African Rands and converted to United States Dollars at the prevailing rate of exchange (ZAR 6.2 = USD 1).

Project Characteristics

Seven-point Likert scales (1=very weak to 7=very strong) were used to collect data on project characteristics (Table 3) (Likert

Table 3
The project characteristics measured on 7-point Likert scales
(1=very weak; 7=very strong)

Project characteristic	Description
Extent of threat reduction targeted	The extent to which a project has explicitly targeted the reduction of threats to the conservation of a site or group of sites of interest
Extent of total project support	The extent to which a project budgeted resources/made provision for marketing, training, coordination and network-building in support of the local guides.
Extent of focus on the candidate selection process	The extent to which projects have committed time and other resources in the selection process of candidates for training in CBAT projects
Accessibility to potential market	The perception of project coordinators and avitourism stakeholders of the extent to which a site with local guides is accessible to potential clients
Extent of birding and tourism attraction	The perception of project coordinators and avitourism stakeholders of the level of attractiveness of each project site as a bird-watching location

1967; Tourangeau *et al.* 2000). Some of the CBAT projects were initiated with an explicit objective of reducing threats to the conservation of a site. Other CBAT projects were initiated to create jobs through avitourism and raise awareness about birds and the environment more generally. For this reason, the extent to which conservation and the reduction of threats were targeted in a project, was measured as a project characteristic (Table 3). The other measured project characteristics were the extent of total project support, the extent of focus on the candidate selection process, the accessibility to the potential market, and the level of birding and tourism attraction of the sites. The Likert scale scores and supporting qualitative evidence for scores were obtained from project coordinators, local guides and stakeholders at each site, and averaged across respondents.

Analysis

The relationship between conservation benefit, as indicated by a project's TRA score (Salafsky *et al.* 2001), total income, and different project characteristics were evaluated through the Gamma correlation coefficient (G), recommended for many tied observations (Siegel & Castellan 1988). The relationship between income and conservation benefits was evaluated through Pearson's Correlation Coefficient, as there were few tied scores. The relationship between income and conservation benefit was adjusted for size through calculating the income per hectare of the site of conservation interest. We adjusted the p-values using the Bonferroni correction for multiple testing (Quinn & Keough 2002). The cost of job creation in the CBAT projects was calculated by dividing the project expenditure at each project site with the number of project beneficiaries (local guides). Project beneficiaries included those guiding, working in a job related to their training and development, and working in a job they obtained because of their training development.

At the time of field research, all projects in this study had been in operation for over two years and only one local guide had been employed for less than one year. The creation of a new job is defined as a job that is sustainable for one year or longer depending on government's continued policy to invest (Urban-Econ 2000).

RESULTS

Conservation Benefits

Alien invasive plants and the unsustainable utilisation of natural resources were the two most common threats to the CBAT projects surveyed (Table 4). The extent of threat reduction as measured by the TRA score varied from 3% at Amitikulu and Ngoye Nature Reserves to 53% in Richard's Bay. The extent of threat reduction, was positively correlated with the extent to which the reduction of threats to the conservation of a site was a targeted project objective (n=11, G=0.609, adjusted p=0.03). The CBAT projects at Amatikulu and Ngoye were centred on existing protected areas managed by KZN Wildlife, a government conservation agency, and focussed on job creation and fostering an increased awareness of birds. The project in Richard's Bay was initiated to strengthen the conservation of key bird conservation sites in high value development areas of an expanding industrial city. An example of the conservation benefits in Richard's Bay is the declaration of Thulasihleka Pan, which was earmarked for development, as a no development zone, to be managed by BirdLife Zululand, the local BirdLife South Africa branch. Additional conservation benefits from CBAT projects included 36,557 people primarily from financially impoverished rural communities that attended at least one outing, talk or event arranged and conducted by one of the 73 local guides on the CBAT projects. Additionally, a total of 2,393 person-labour-days were contributed to conservation activities. The level of income benefits did not correlate with success in reducing threats to conservation.

Income Benefits and Cost-effectiveness

At the time of field research, local guides were earning an average of USD 362 (± USD 268) per month compared to USD 114 (±USD 155) per month before they were trained and started working as local guides (paired t-test; t=-5.019, p < 0.001, n=26). This amounts to an additional USD 248 per month or USD 2,976 per annum. The extent of project support (including marketing, network building, coordination/management, capacity building/training) was positively associated with total income of the guides (n=10, G=0.714 adjusted p=0.01). The average cost per job created in the avitourism projects was USD 6,974. The cost varied from USD 2,437 in the Magoebaskloof to USD 13,905 per job created for the projects of the ZBR. Thus, it would take an average of 2.34 years for the increased income of local guides to equate to the cost of the CBAT projects, although this would vary from 0.82 years for small

cost-effective projects like Magoebaskloof to 4.67 years for larger projects like the ZBR.

Empowerment Benefits

Empowerment is defined as giving someone a greater ability to take charge of their own future according to their own goals and criteria (de Beer & Swanepoel 1998). Many of the local guides indicated a noteworthy increase in their sense of self-worth and their capacity for self-determination. The following quotes from local guides are an indication of these empowerment benefits: “Now I can go out and do something valuable with my life that can make a difference.” “I have become a much more responsible person and it [the CBAT project] has made me famous. I am now famous and I must use this fame in a positive way.” “This project has changed my life tremendously in a positive way.”

Furthermore, there was an increase in guides’ sense of pride in their local environment, and a desire to share their newfound knowledge with their community and visitors. An empowered sense of wanting to share newly-gained knowledge with their communities would have strengthened the success of the conservation and awareness activities described above as indicated by the following quotes: “Learning about bird identification, bird behaviour and bird ringing and measuring

has opened a whole new world to me. By taking out schoolchildren this awareness can be widened.” “Learning about the birds and the environment around me and how to guide has been a positive and life-changing experience that I want to share with my community.”

Empowerment benefits were not restricted to the local guides only. The end of Apartheid presented a challenge and opportunity for white South Africans to engage constructively in a multi-racial society and to start addressing the imbalances of a racially segregated past. A majority of individuals that supported CBAT projects were birdwatchers and the CBAT projects gave them an opportunity to contribute to building a post-Apartheid society through initiatives that related to bird watching. The following quote from a supporting individual reflects these benefits: “Learning about a different culture and being part of the growth and personal development of the local guides has been phenomenal and a very gratifying experience”.

Challenges and Failures

The successful and sustainable implementation of CBAT projects face four types of challenges. First, the differences in cultures and worldviews between project participants, tourists and local guides were a source of misunderstanding and conflict. This manifested in one case in local guides

Table 4

Summary of the Threat Reduction Assessment (TRA) scores for each site.

X denotes a threat is present at a site. TRA score % represents the extent to which threats to a site have been reduced as a result of a project.

Project	Dlinza	Muzi Pan	Richards Bay	Ngoye Forest Reserve	Amatikuu Nature Reserve	Green Futures	Kimberley	BSNHS	Magoebaskloof	Wakkerstroom
Direct threats										
Alien invasives	X	X		X	X	X		X	X	
Unsustainable harvesting of natural resources	X	X		X	X	X	X		X	
Fragmentation by urban development	X									
Domestic pets	X						X			
Overutilisation by tourists	X									
Habitat transformation***		X	X			X			X	X
Pollution and industrial spills			X				X			
Siltation			X							
Cattle / Livestock grazing				X			X	X		X
Trampling by vehicles				X						
Unfavourable burning practices				X	X	X	X			X
Prospecting and mining							X	X	X	
Illegal access							X	X		X
TRA score %	19	24	53	3*	3	33	0	24	7	6**

*The projected score for Ngoye once the birding lodge is up and running was calculated at 33.70%.

**The TRA score for Wakkerstroom is attributed 50% to the Bell’s guides project and 50% to the BLSA project as the combined extent of influence on conservation in the Wakkerstroom area was reported as similar.

***The causes of habitat transformation were subsistence agriculture at Muzi Pan, industrial development at Richards Bay, housing and agricultural development at Green Futures and commercial forestry expansion in the Magoebaskloof and Wakkerstroom.

viewing a project as a tremendous success, whilst the project coordinator of the same project viewed it as a failure. Second, the post-Apartheid South African socio-economic environment rooted in a legacy of oppression resulted in local guide's lack of self-assurance and confidence as reflected in this statement by a local guide: "If we are making an arrangement with a white person, it is very difficult to say, 'no, I can't make it on Sunday morning to go birding'. It is easier and more acceptable for us to say 'yes, we can make it', knowing that we can't and then we just don't show up". Understandably, the sentiments and actions reflected in the above quote resulted in the generation of negative sentiments from the primarily white supporting individuals and organisations. Third, high levels of community and family problems, and lack of resources (e.g., lack of money for taxi fare to attend a project meeting) negatively affected the reliability of local guides, who frequently missed appointments. Fourth, most local guides have had little exposure to western business norms. Developing the capacity of birding guides to compete successfully in a western-dominated business environment is a challenging and costly process. This frequently led to project stakeholders becoming frustrated as reflected in this quote from a supporting individual: "The local guides do not seem to be able to see or have the capacity to utilise the opportunities that are being created for them or understand the consequences of their actions".

Long-term Sustainability

Anecdotal evidence gained in 2009 from informal conversations, newsletters and websites of the CBAT projects provided insight into their long-term sustainability. A majority of the projects associated with the ZBR still had active local guides, and the ZBR continued to provide marketing and training support, and was planning to continue to do so. In addition, the successful model of the ZBR was used as a basis for the development of nine additional birding routes in South Africa (BirdLife South Africa 2010). A majority of the trainees from the Green Futures project and the associated Grootbos Private Nature Reserve were still active in their field of training. Green Futures also provided ongoing and long-term support to its past trainees. The local guide based in the Magoebaskloof was also still active. Although the budget for the Magoebaskloof project was limited, the local guide, Mr. Letsoalo entered into a partnership as an employee of the local Khurisa Moya Lodge, which provided him with an additional source of income. Importantly, during the interviews, many of the local guides also indicated a strong preference for being employed, or having clients sent to them, rather than having to start up their own businesses or micro-enterprises and generate demand for their services on their own.

DISCUSSION

Our study represents one of the first assessments of factors that can enable the success of CBAT projects. Our evaluation of CBAT projects in South Africa provides insight into

factors associated with higher levels of conservation and income benefits, and their cost-effectiveness and long-term sustainability. The successes and failures of CBAT projects, and the conditions under which they are more likely to work, are similar to those in community-based tourism and community-based conservation more broadly. These issues are discussed in turn.

Conservation Benefits

Our finding of a non-significant relationship between total income and conservation benefit measured by the TRA score is commensurate with other studies on community-based conservation (Salafsky *et al.* 2001; Stem *et al.* 2003; Berkes 2004; Linkie *et al.* 2008). Non-cash benefits, including the extent of local ownership and strength of local property rights, education, equity and empowerment are often more important than monetary incentives for conservation (Salafsky *et al.* 2001; Stem *et al.* 2003; Berkes 2004; Fabricius 2004). On the other hand, Morgan-Brown *et al.* (2010) showed that income from butterfly farming in Tanzania mediated higher levels of participation in conservation-behaviour and a greater belief in the effectiveness of conservation action. Overall, it seems as though increased income can strengthen favourable conservation attitudes and actions, but it may be insufficient on its own. Increased income is more likely to lead to favourable conservation outcomes if combined with additional benefits such as education, an increased sense of pride and ownership of a resource or area, and stronger local property rights that empower communities to manage their own resources.

Our finding that total project support was positively correlated with income benefits to local guides is commensurate with previous studies (Salafsky *et al.* 2001; Kiss 2004; Sanderson 2005). A majority of the support to CBAT projects usually comes directly from the project implementing and coordinating agency. However, there are examples where direct support from an NGO is relatively limited, and a high level of external support from, for example, interested private individuals or companies was important in ensuring project success.

Cost-effectiveness and Sustainability of Job Creation

The cost per job created in the CBAT projects varied from USD 2,437 for the Magoebaskloof project to USD 13,905 for the ZBR related projects with an average of USD 6,974 per job created. The CBAT projects with a shorter funding commitment created jobs more cost-effectively than the ZBR projects which had a larger budget and a longer funding commitment. However, the long-term sustainability of the jobs in the smaller, shorter term projects is dependent on the competitiveness of the local guide(s) and the existence of a strong and sustainable local support network for the guide(s). Whilst the investments by the ZBR increased the overall cost per job created, they have played an important role in the sustainability and long-term success of the project. This is evident by the ZBR's continually updated website (www.zbr).

co.za) and ZBR's regular presence at international birding travel fairs such as the British Birdwatching Fair.

Partnerships with lodges in the private sector (e.g., Magoebaskloof and Green Futures) enable smaller commitments of upfront funding to CBAT projects which lead to sustainable job creation in the longer term. In such partnerships, many of the costs associated with job creation, such as marketing and the creation of a client base are absorbed as part of the existing costs incurred by an agency such as a lodge. An advantage of this approach is that the established tourism lodges are often better equipped than an NGO to market the services of local guides. However, anecdotal evidence from our research suggests that often the relationships between the local guides and a partnered tourist establishment need to be facilitated and supported by an NGO. This support is necessary because the challenges and failures described above also regularly manifest in the relationships between local guides and western tourist lodges, and frequently require mediation. While this may increase the cost of a partnership-based model, it is likely to be cheaper than a project that requires a large commitment of funding over a long period of time.

When Can CBAT Work?

The challenges experienced in CBAT projects are not unique. Capacity constraints and inadequate consideration of the market and business aspects are challenges central to community-based tourism more broadly. In a review of 218 community-based tourism ventures operating in 12 southern African countries, Spenceley (2008a) identified severe business capacity constraints. These constraints included accessibility (among 91% of enterprises), market access (72%), advertising (70%) and communications (57%)—despite more than half of the enterprises receiving some form of external support from a third party. Similarly, Dixey (2008) found that only nine of 25 community-based tourism enterprises in Zambia evaluated had sufficient information on their income to compare their level of donor investment, visitor numbers, gross revenue and net income. Key determinants of success were linkages to tourism companies, proximity to main tourism routes, competitive advantage, financial management, visitor handling and community motivation. There is little value in establishing a community-based tourism venture which tourists do not know about (because of poor promotion); cannot reach (because of poor infrastructure); where the establishment is product-rather than demand-led (because no market research was done), and where service levels are inadequate (because of poor training) (Spenceley 2008b).

The birding route approach taken by BirdLife South Africa in its CBAT projects addresses a number of the challenges identified in the community-based tourism literature. CBAT projects have paid attention to the tourist market (through feasibility studies and a strong marketing focus), and concentrated on enabling small business development underpinned by long-term organisational support through birding routes and BirdLife Travel. The BirdLife South Africa

model requires external funding to provide long-term support to CBAT initiatives. The need to provide external long-term funding to enable societal transformations toward conservation and human development is well recognised in South Africa and elsewhere (Cattarinich 2001; Salafsky *et al.* 2001; Ashley 2006). This long-term support can be directed through the organisational structure of a birding route, partnerships with tourism companies or lodges, or the presence of strong and committed stakeholder support groups. In addition, the large private sector companies, such as Rio Tinto, SASOL, and De Beers, that have supported CBAT projects in South Africa to date may be able to make an important contribution to this long-term support. Ultimately, however, CBAT initiatives need to consider the tourism market and its requirements, as increased commercial viability will increase the prospects of CBAT initiatives surviving in the long-term.

However, it is widely acknowledged that one of the major challenges of engaging in the tourism market is its volatility (Ashley *et al.* 2001; Christie & Crompton 2001; Briedenhann & Wickens 2004b). Although the South African tourism market is exposed to this volatility, the strength of the domestic tourism market plays an important buffering role. Biggs (2001) showed that of the potential demand for the services of a local guide at the Blue Swallow Natural Heritage 96% is from South African tourists. A high proportion of domestic demand reduces the exposure of local guides to the volatility of the international tourist market. Nevertheless, CBAT should not be seen as a stand-alone community development strategy. CBAT should be considered as one component of a broader livelihoods strategy for individuals and households in a community and should complement rather than displace existing activities (Fabricius 2004; Tao & Wall 2009).

Finally, this paper demonstrates the success of CBAT in reducing threats to sites of conservation interest, where this is a targeted objective, and in raising conservation awareness and fostering conservation action. CBAT provides tangible income benefits to local guides and we have shown that CBAT is a cost-effective way to create jobs in South Africa. Realising the potential that CBAT holds for conservation and communities, however, requires a commitment to long-term support, a nuanced understanding of the market and business principles that underpin CBAT, the ability to engage in cost-effective marketing of local guides, and a tolerance and understanding of diverse cultures and worldviews.

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