Expenditure by conservation nongovernmental organizations in sub-Saharan Africa

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Abstract

Evaluations of conservation performance and efficiency are still in their infancy. They will require understanding more about where conservation funds are actually spent, and how conservation sectors are structured. We present an overview of the work of conservation nongovernmental organizations (NGOs) in sub-Saharan Africa from 2004 to 2006, based on an extensive survey and consultation exercise. We show that the distribution of funds within the sector is highly unequal, concentrated in a few organizations. Expenditure within the continent is uneven, highest in the south and lowest in the west. Only a small proportion of protected areas receive some form of support. At a country level, expenditure is well matched with species richness and threat, but the causes of those correlations are not clear. These results identify what we need to know about what conservation organizations actually do and thus advance the task of evaluating conservation effectiveness.

Introduction

Conservationists are becoming increasingly adept at determining where conservation resources should be directed. Different models that prioritise biodiversity, threat, and wildness (Brooks *et al.* 2006) are being further modified to incorporate costs of conservation actions and their sequencing (Murdoch *et al.* 2007; Wilson *et al.* 2007). However, the conservation movement is less capable at evaluating where its money is spent and to what effect.

Several means of addressing the deficiency have been suggested. Some have called for evidence-based evaluations of interventions drawing on insights from development and health practice (Kleiman *et al.* 2000; Pullin & Knight 2001; Saterson *et al.* 2004; Sutherland *et al.* 2004; Stem *et al.* 2005). Ferraro & Pattanayak (2006) have advocated rigorous measuring of counterfactual outcomes as part of this process. Mcdonald-Madden *et al.* (2009) argue that conservation progress must also be measured against losses. Such evaluations are best applied to specific interventions. As Kapos *et al.* (2008) have argued, however, there is more that goes on in conservation's

name which is less amenable to such rigorous testing. They mention inter alia research, training and capacity building, developing policy, education and promoting livelihood change. To their list we could add advertising, campaigning, networking, attending meetings, and supporting offices. The links between such conservation activities and valued outcomes can be lengthy.

In addition to programme-specific evaluations, it will also be important to take a more general and inductive approach to studying conservation expenditure. This involves asking where funds actually go, and what can we learn from patterns that emerge about the nature of existing conservation work and priorities? There have been some attempts using this approach. James *et al.* (1999) examined government expenditure, finding that it fell substantially short of funds needed to support protected areas. The most comprehensive study of nongovernmental expenditure is by Halpern *et al.* (2006), who found that globally the presence of priority areas explained a small proportion of spending but concluded that "global priority models are having little effect on how money is distributed among countries containing high-priority areas" (p. 62). Similarly, an assessment of donor support to conservation projects in Latin America and the Caribbean

found that some high-priority regions were relatively neglected and recommended that the distribution of funding across regions be reviewed (Castro & Locker 2000). Mansourian & Dudley (2008) found that of the top 16 countries receiving environmental aid only 37.5% had high biodiversity value (based on an aggregate score of each country's concentration of the World Wide Fund for Nature's [WWF] Global 200 ecoregions, hotspots, centers of plant diversity, endemic bird areas, Alliance for Zero Extinction sites, and the Convention on Biological Diversities' National Biodiversity Index).

Our knowledge of conservation spending patterns is discouraging. Prioritization devices are defended and debated for their impact on fund-raising, not on how well they guide expenditure (Mace *et al.* 2000; Myers & Mittermeier 2003). Given this gap it would be useful to learn more about where conservation funds go, and how these relate to conservation priorities. To address this issue we examined expenditure by conservation NGOs in sub-Saharan Africa. We have chosen NGOs because they are vital to any assessment of the efficacy of conservation expenditure. They are important means of transferring funds from the wealthy North, to the poorer South, where valuable places which are relatively cheap to work in are found (Balmford & Whitten 2003). The conservation NGO sector enjoys considerable freedom to seek alliances with states and other NGOs in pursuit of international conservation agendas. Funds in the sector can therefore flow relatively freely to places of conservation need compared to state expenditure. Expenditure by international organizations (the United Nations and World Bank) and large philanthropic foundations is considerable, but we wanted to see where money was spent, not to which organizations or causes it was donated. Sub-Saharan Africa is a good place to look at NGO expenditure because the region's poverty means that government expenditure on conservation is small and so NGO contributions, both absolutely, and relative to state funds, are likely to make important contributions toward realizing conservation goals.

Methods

To examine patterns in conservation NGO expenditure in sub-Saharan Africa, we drew up a list of relevant NGOs working in the region and determined where they were working and how much they were spending in different places (Scholfield & Brockington 2008). We had to create our own as there is no good list of conservation NGOs working in the region. Beginning in July 2006, we devised our list using our knowledge of the region, the literature, the internet, and lists of grantees reported by fund-

ing organizations. When these methods were exhausted, we sent out our list for comment to academics and NGO employees with regional expertise, to members of the Environmental Anthropology list serve (www.eanth.org/onlineresources2.php?resource=listserv.php), and eventually to all the organizations themselves.

We have discussed the problems of these methods elsewhere (Scholfield & Brockington 2008; Brockington & Scholfield 2010). Suffice to say that what constitutes a conservation NGO is contested terrain. We have limited our list to a strict definition of "conservation" NGO and included only organizations which were attempting to conserve wildlife, habitat, and protected areas. This produced a core group of self-identifying conservation organizations, which accounted for the majority of funds spent. We included or excluded animal welfare, general environmental and environmental education organizations on the margins of this group according to our collective assessment of their projects as reported on their websites and annual reports. Our principal means of testing the validity of the list resulting has been two extensive consultations with the NGOs listed themselves.

The list resulting comprises 281 organizations (see Supporting Table S1). It almost certainly misses some local groups, and excludes many environmentally orientated organizations, which more liberal definitions of conservation might include. However, it has passed scrutiny by colleagues throughout the conservation movement in Africa. We believe that it suffices for our purposes. It allows us to draw some cautious conclusions about patterns in conservation activity, and it serves as a base upon which further studies can improve.

To learn what NGOs were doing and where, we read about the projects they undertook in their annual reports and websites. We examined nearly 900 projects to establish more precisely where conservation NGOs are active and in which protected areas they worked. We sought to find out how much money they spent, by country, in the years 2004, 2005, and 2006 (more recent data were not widely available at the time of the survey). The best sources of financial data for charities in the UK and USA are the accounts sent to the Charities Commission and I-990 forms, respectively. We also collected data from websites and annual reports and from telephoning, emailing, and meeting staff of different NGOs.

We were able to obtain financial data for 87 (31%) of our list of conservation organizations for some or all of the years 2004–2006, including all the largest organizations. Where we did not have figures for all years we estimated missing data as the average of years for which we had data; 33% of the data for 2004 are estimated, 6% for 2006, and less than 0.5% for 2005. The data mix financial years (ending in different months) and calendar

Table 1 Expenditure by conservation NGOs in sub-Saharan Africa 2004—to 2006 (US$ 2006)

	2004	2005	2006
Expenditure	113,723,444	130,524,350	143,396,577
Expenditure + overheads	139,929,996	159,992,336	176,480,749
Overheads ($)	26,206,553	29,467,986	33,084,172
Overheads (%)	23%	23%	23%
Proportion of data in each year which has been estimated from other years	33.5%	0.4%	5.7%

years. We have not tried to convert the former to the latter. Instead we have taken figures for financial years to refer to the calendar year in which most of their activities fall. There is a danger of double-counting funds because many of the organizations on this list are funding each other. We have coded such donations separately in our database so that they can be removed where necessary for the analysis. All financial figures are expressed in 2006 US$ using exchange rates and the GDP deflator available at www.measuringworth.com/index.html. We report patterns in expenditure with and without "overheads." Overheads refer to fundraising and administration costs, which are reported separately from other expenditure in tax return forms. We have checked our records in the first consultation exercise with the NGOs when we sent each organization a spreadsheet detailing our records of their expenditure.

To compare expenditure patterns against conservation priorities at the country scale we used a version of the Groombridge & Jenkins's Diversity Index (2002), updated using more recent data, as well as an index of threat based on threatened species found in the IUCN Redlist (see Supporting Information). We used SPSS software to test the relationship between spending, biodiversity, threat, and protected areas.

Results

Annual observed conservation expenditure by all conservation NGOs for which we had financial data increased from just over $110 million to over $140 million from 2004 to 2006, an increase of about $30 million in 2 years (Table 1). Indeed, the increase could be higher because the figures for 2004 contain estimates based on later years, which would dampen growth trends. Given that expenditure would have been close to zero in 1960 (just before the African Wildlife Foundation and WWF join the scene, see Supporting Table S1), and it increased to just over $110 million in 2004 in a 44-year period, then the increase we observed in these years is likely to be higher in both absolute and relative terms than previous years.

In general, fundraising and management costs of spending conservation sums are about 23% of expenditure (Table 1). These figures are determined entirely by the conservation NGOs themselves, reported in their accounts. We offer no judgment as to whether this figure is high or low, but it is important to note that low overheads are necessarily optimal. Organizations which give money away, and which therefore must check that money is spent well, or which raise money from poor people can expect to have relatively high overheads.

Distribution of money within the sector is uneven (Table 2). One organization (WWF) dominates, and over 80% of observed expenditure is accounted for by just 10 organizations (Table 3). We predicted the total size of the sector, estimating expenditure for NGOs for which we had no financial data based on the geographical

Table 2 The observed and predicted structure of the conservation NGO sector in Sub-Saharan Africa

Size Class	Range of expenditure Including overheads	Counted NGOs	Average expenditure Including overheads	Predicted NGOs	Predicted total expenditure Including overheads	Predicted Structure
7	Over $40 million	1	42,708,026	1	42,708,026	21%
6	$10 million to $21 million	4	15,559,663	4	62,238,653	31%
5	$4.2 million to $6.2 million	5	5,467,690	5	27,338,450	14%
4	$0.8 million to $1.9 million	10	1,351,520	18	24,327,360	12%
3	$0.3 million to $0.72 million	14	479,142	46	20,603,106	11%
2	$0.1 million to $0.3 million	26	200,090	90	18,008,100	9%
1	Up to $0.1 million	27	54,927	102	5,712,408	3%
Total		87		263	200,936,102	

Expenditure is in $US (2006). The procedures for estimating expenditure for NGOs for which we had no financial data is explained in Supporting Information.

Table 3 The largest 10 conservation NGOs in sub-Saharan Africa

Organization name	Average expenditure	Average expenditure including overheads	Countries in which active
World Wide Fund for Nature	35,212,994	42,708,026	44
Conservation International	17,264,283	20,247,980	9
Wildlife Conservation Society	15,585,563	17,321,231	19
African Wildlife Foundation	12,073,116	14,614,140	11
Peace Parks Foundation	8,392,335	10,055,302	9
Jane Goodall Institute	4,412,168	6,120,999	2
Fauna and Flora International	4,895,446	5,947,705	8
Frankfurt Zoological Society	4,837,535	5,895,838	7
African Parks Foundation	3,246,610	5,136,265	6
Dian Fossey Gorilla Fund	3,497,692	4,237,644	2

Expenditure is in $US (2006).

scope of their activities (see Table 2 and Supporting Information). This suggests that average annual expenditure, including overheads, is about $200 million dollars. Predictions of shortfalls in governments' spending on protected areas, which could be met by the NGO expenditure we describe here, range from US (2006) $458 million (James *et al.* 2001) to $841 million (Moore *et al.* 2004). NGO expenditure therefore does not cover government spending shortfalls.

There are distinct patterns in the scope and coverage of NGOs activities. WWF works in far more countries than any other organization (Table 3). The distribution of funds and organizations across the continent is also uneven (Figure 1). Least money is spent in west Africa, most in southern Africa. Within each region expenditure is unequal with particular countries forming hubs.

Support for protected areas is slight, with just under 14% of protected area estate (by area) receiving some form of support from conservation organizations (Figure 2). There is a tendency to support more strictly protected category 1–4 protected areas (as defined by the IUCN, see Supporting Information), 37% of which receive some form of support. Except in a few cases where organizations were devoted to supporting specific protected areas, we were unable to determine how much was being spent on individual protected areas. We are thus unable to calculate expenditure per km^2.

It would be possible to support a greater proportion of protected areas. The running costs of protected areas can be predicted on the basis of their size and the wealth of the country in which they are (Moore *et al.* 2004). The equation predicting running costs suggests that 92% of IUCN category 1–4 protected areas' management costs could be completely met, without any government expenditure, with an annual expenditure of $64 million.

This figure excludes establishment costs and capital investment costs.

How well does conservation expenditure match conservation goals? It would be possible to draw up a priority list of protected areas according to their importance, level of threat, and cost of working there, and evaluate conservation expenditure according to their support of that list. But we have been unable to determine support for individual protected areas management costs sufficiently well to make such a comparison. We were simply unable to determine what expenditure per square kilometer of protected area was from the data we had available. Indeed our data also suggest that conservation expenditure is not geared closely enough to provide protected areas' management costs for this to be a meaningful task. Instead we opted for a broadscale approach, comparing country level expenditure with country level indices of threat and biodiversity. We found that expenditure is well correlated with biodiversity and threat (Table 4). Correlations are stronger if these measures are not standardized for country size. Conservation expenditure appears, at country level, to be closely related to different estimates of conservation need. It is weakly correlated with the absolute amount of land set aside in protected areas, and does not follow the proportion of each country set aside. Graphs of these relationships are shown in Supporting Information (Figures S1 and S2).

Discussion

Our survey was undertaken before the credit crunch and accompanying global recession. Part of the usefulness of these data is that they provide a baseline against which we can compare the experience of the sector to explore what the impact of global economic change has been on the sector's income. They allow comparative assessments of how much money the sector was able to expend during lean years, and where funding is directed during such times.

More importantly, this research suggests further directions in how to evaluate conservation expenditure. It contains both chastening and encouraging results for conservation NGOs but both sorts of findings demonstrate the need for more careful observation of where conservation funds are spent. This will facilitate the development of better indicators for evaluating conservation performance.

The surprising result was how few protected areas are supported, compared to how many could be. An average annual expenditure of $129 million results in partial support of 37% of more strictly protected areas (and any form of support, no matter how small, qualified as
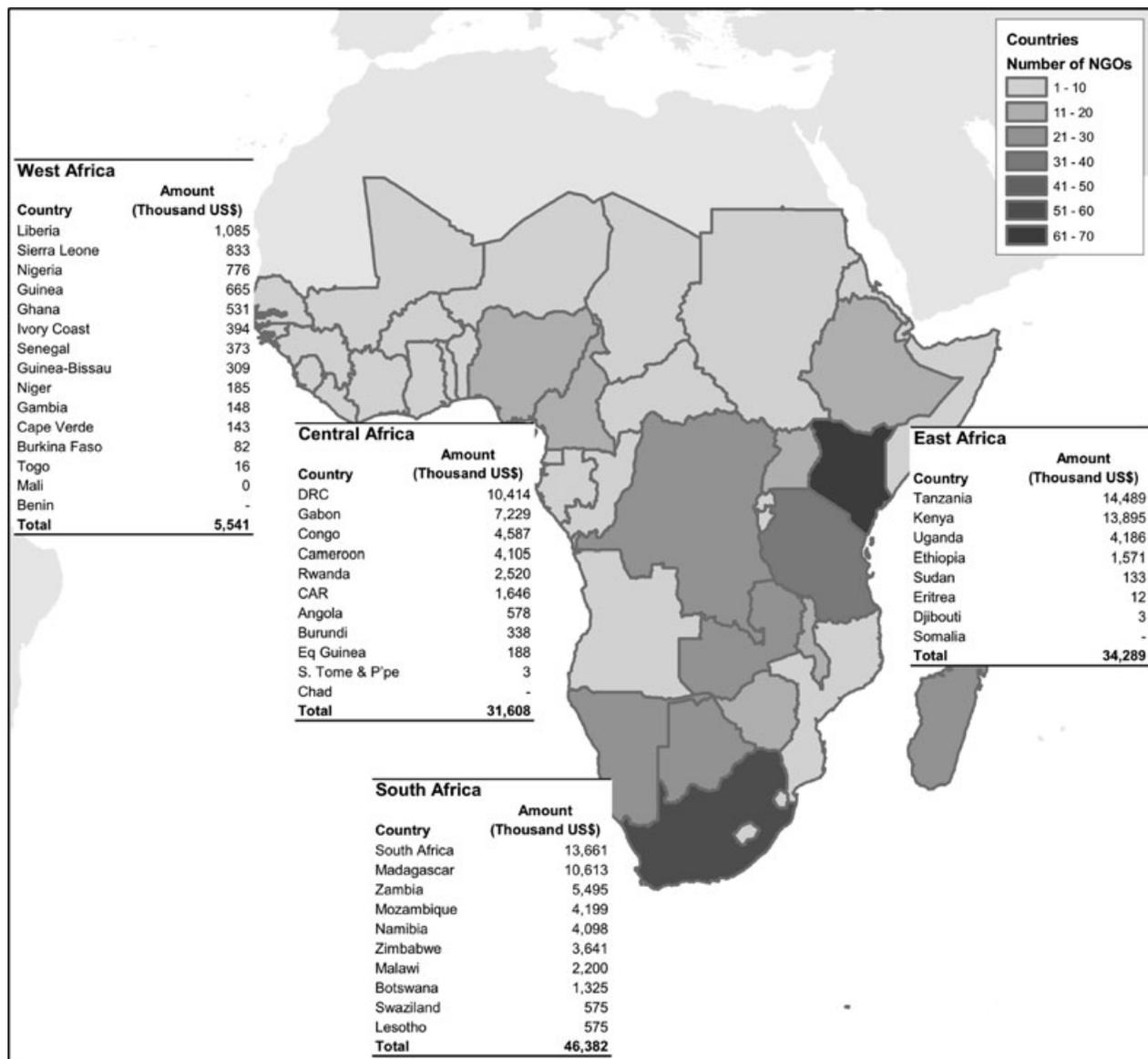
Figure 1 The geographical distribution, by country, of conservation NGO activity and their spending in sub-Saharan Africa.

West Africa

Country	Amount (Thousand US$)
Liberia	1,085
Sierra Leone	833
Nigeria	776
Guinea	665
Ghana	531
Ivory Coast	394
Senegal	373
Guinea-Bissau	309
Niger	185
Gambia	148
Cape Verde	143
Burkina Faso	82
Togo	16
Mali	0
Benin	-
Total	**5,541**

Central Africa

Country	Amount (Thousand US$)
DRC	10,414
Gabon	7,229
Congo	4,587
Cameroon	4,105
Rwanda	2,520
CAR	1,646
Angola	578
Burundi	338
Eq Guinea	188
S. Tome & P'pe	3
Chad	-
Total	**31,608**

East Africa

Country	Amount (Thousand US$)
Tanzania	14,489
Kenya	13,895
Uganda	4,186
Ethiopia	1,571
Sudan	133
Eritrea	12
Djibouti	3
Somalia	-
Total	**34,289**

South Africa

Country	Amount (Thousand US$)
South Africa	13,661
Madagascar	10,613
Zambia	5,495
Mozambique	4,199
Namibia	4,098
Zimbabwe	3,641
Malawi	2,200
Botswana	1,325
Swaziland	575
Lesotho	575
Total	**46,382**

Countries
Number of NGOs

	1 - 10
	11 - 20
	21 - 30
	31 - 40
	41 - 50
	51 - 60
	61 - 70

partial). The predicted cost of completely supporting, that means *without* additional government expenditure, 92% of these protected areas is $64 million.

This finding suggests that the difference between total NGO expenditure from our data ($200 million) and the potential shortfall in government expenditure reported in the literature ($458–841 million) needs to be treated carefully. The shortfalls in government expenditure were based on protected area needs. However, it is not clear from our data that those needs are sufficiently important activity for the conservation NGO sector to be a good basis for predicting NGOs' funding requirements. Estimates

based on protected area costs exclude a great many conservation NGO activities. They also exclude the costs of raising and administering funds.

The close match between biodiversity, threat, and expenditure is a refreshing change from previous studies, which show a poor match between expenditure and need (Castro & Locker 2000; Halpern *et al.* 2006; Mansourian & Dudley 2008). What is harder to explain, however, is why this pattern exists. We cannot infer cause from correlation, so we cannot be certain how far the presence of conservation priorities is driving this distribution. There are many other factors that would need to
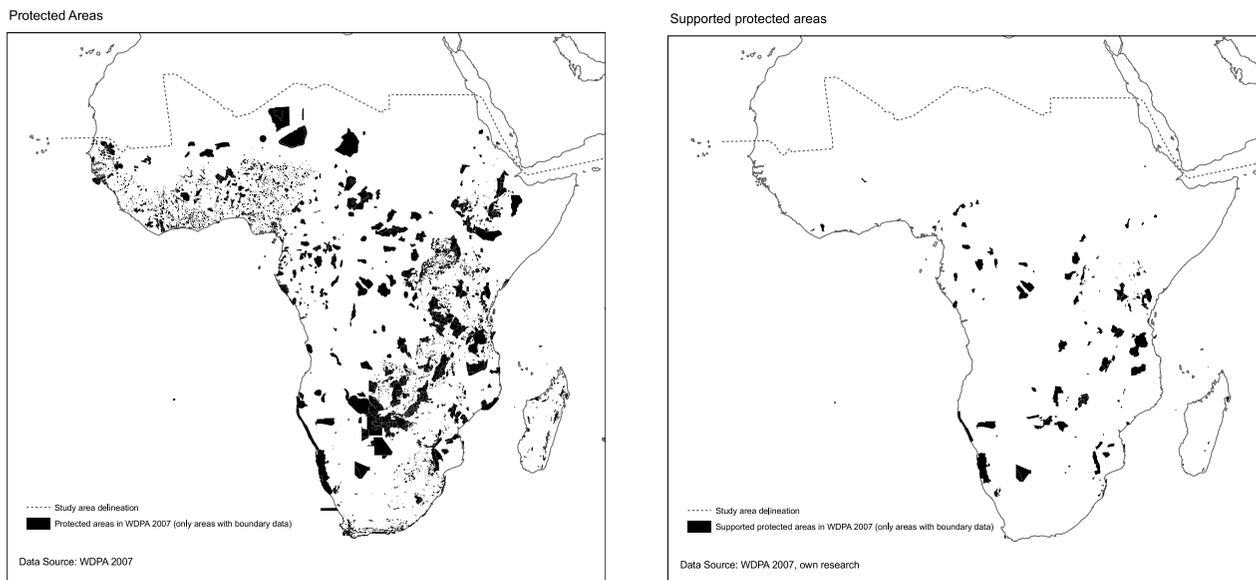
Protected Areas

Supported protected areas

Figure 2 The distribution of all protected areas, and those receiving some form of support from conservation NGOs in sub-Saharan Africa.

be considered if we are to develop a robust explanation of conservation spending which included political and historical factors that can shape conservation agendas. For example, we could consider levels of wealth, indices of good governance, corruption, infrastructure, and language. We would also need to consider the history of conservation interventions in particular countries. Some of these factors will have clearly predictable influences—Anglophone, Francophone and Lusophone NGOs, for example, are likely to work countries, which speak their language. But others will depend on the type of NGO. Good governance may attract some NGOs because they will it easier to work in well-governed countries. Conversely, others may be adept at getting things done in corrupt environments (cf. Chabal & Daloz 1999). Similarly, wealth and good infrastructure will be appealing to some organizations, but to others represent simply greater expense.

Furthermore, although the positive association of conservation expenditure with conservation need is encouraging, we have not factored costs of doing conservation into these calculations. Costs matter because they vary by several orders of magnitude, much more than indices of conservation importance (Naidoo *et al.* 2006; Murdoch *et al.* 2007). Before the conservation community can draw comfort from the correlation of spending

Table 4 Spearman's rank correlations of expenditure with measures of biodiversity, threat, and protected area

		Diversity index	Threat index	Category 1–4 protected areas
Expenditure	Correlation coefficient	0.743	0.650	0.373
	Sig. (two-tailed)	<0.001	<0.001	0.014
	N	43	43	43
		Diversity index standardized per km^2	Threat index standardized per km^2	Proportion of land in category 1–4 protected areas per km^2
Expenditure	Correlation coefficient	0.507	0.383	−0.065
	Sig. (two-tailed)	0.001	0.11	0.677
	N	43	43	43

with biodiversity and threat it will have to explore how considering costs might alter the pattern. Determining costs will not be straightforward, as the activities we encountered during our survey were diverse. The most frequent comparative measurement of conservation cost used is the expense of supporting protected areas (James *et al.* 2001; Bruner *et al.* 2004; Moore *et al.* 2004). However, as we have just seen, the relevance of this measure is questionable. As Naidoo *et al.* (2006) have shown, there are many different varieties of costs which conservation has to meet. It is clear that we need a closer description of what conservation NGOs do day-to-day before we could work out what measure, or set of measures, of cost would be the most appropriate for evaluating the efficiency and effectiveness of NGO conservation work. Kapos *et al.* recently provided a framework for comparing different sorts of activities, costs, and their outcomes (2008).

Evaluating effectiveness in conservation is still in its infancy. As it develops it will be useful to take a closer look at the work of different institutions promoting conservation. More understanding is required of the goals are being realized by current patterns of expenditure. Indeed that would be a necessary part of improving the efficiency of the conservation sector's operations.

Acknowledgments

Supporting Information

Additional Supporting Information may be found in the online version of this article:

Figure S1 Graphs of expenditure and biodiversity, threat and protected areas not standardized for area.

Figure S2 Graphs of expenditure and biodiversity, threat and protected areas standardized for area. The outlier is Rwanda.

Table S1 The list of conservation NGOs active in Africa

Table S2 The distribution of NGOs according to size and geographical scope

Table S3 Predicted distribution using size class 1–3

Table S4 Predicted distribution using size 1–4

Table S5 Comparing our index of DI and AI with Groombridge and Jenkins

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