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Local attitudes towards conservation and tourism around Komodo National Park, Indonesia

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Summary

Ensuring local support for protected areas is increasingly viewed as an important element of biodiversity conservation. This is often predicated on the provision of benefits from protected areas, and a common means of providing such benefits is tourism development. However, the relationship between receipt of tourism benefits and support for conservation has not been explored. This study examined local attitudes towards protected area tourism and the effects of tourism benefits on local support for Komodo National Park, Indonesia. Komodo National Park is a flagship for tourism in a region where protected areas are becoming increasingly visited and where local support for conservation has not been investigated. Results of a questionnaire survey revealed positive attitudes towards tourism and high support for conservation (93.7%), as well as a recognition that tourism is dependent upon the existence of the park. Positive attitudes towards tourism were positively related to the receipt of economic benefits, and to support for conservation. However, a positive relationship between receipt of tourism benefits and support for conservation was not identified, suggesting that benefits from protected area conservation make no difference to local support for conservation. Local people recognized distributional inequalities in tourism benefits, and the most common complaints were of local inflation and tourist dress code. To fully identify the impacts of protected area tourism, long-term studies of local attitudes alongside traditional economic and ecological assessments are recommended.

Keywords: local attitudes, tourism, protected areas, conservation, benefit distribution, Indonesia

Introduction

Protected areas are the cornerstones of biological conservation. Although they have usually been set aside from human exploitation, it is now increasingly recognized that protected areas should play a role in sustaining local communities adjacent to them (IUCN/UNEP/WWF 1980; McNeely 1993; Ghimire & Pimbert 1997). Various projects that link conservation and development have been implemented in and around protected areas in an effort to generate benefits for local communities that have otherwise been disenfranchised by protectionist policies (Wells & Brandon 1992). The rationale behind such initiatives is to engender support for conservation among local communities, by involving them in management and decision-making and by providing benefits to offset the opportunity costs of protection. If such projects are successful, we would expect local communities to display more positive attitudes towards conservation and associated development projects.

A number of recent studies have examined the issue of local attitudes towards conservation and development (Heinen 1993; Newmark *et al.* 1993; Mkanda & Munthali 1994; Fiallo & Jacobson 1995; Nepal & Weber 1995; Ite 1996; de Boer & Baquete 1998; Mehta & Kellert 1998). It has generally been found that costs associated with conservation (such as wildlife damaging crops) have negative effects on local attitudes, whilst benefits from conservation (such as game meat) may have some positive effects.

One of the most common uses of protected areas is tourism. Protected areas in developing countries are increasingly popular destinations for wildlife tourists, and tourism has the potential to generate sustainable local benefits 'sufficient for local people to value, and therefore protect, their wildlife heritage as a source of income' (Goodwin 1996, p. 288). Although several studies have examined the economic performance of tourism to protected areas (Lindberg & Enriquez 1994; Walpole & Goodwin 2000; Walpole *et al.* 2001), few have assessed local attitudes towards tourism. One study found that attitudes towards protected area tourism were more positive among those receiving economic benefits from tourism than those not economically benefiting (Mehta & Kellert 1998). However, it remains to be demonstrated whether the receipt of tourism benefits result in more positive attitudes towards conservation.

This study aimed to address this issue. The central hypothesis is that receipt of benefits from protected area tourism results in greater support for conservation amongst surrounding communities. This relies on an associated supporting hypothesis, namely that people recognize the role that a particular protected area plays in attracting tourists to the area. This supporting hypothesis was also tested.

If tourism is to act as a sustainable form of development,

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then two additional factors are important. Firstly, benefits should be distributed in an equitable manner, and secondly host communities should support the development of tourism. Other studies have shown an unequal distribution of tourism benefits within communities and commensurate differences in level of support between those benefiting and those that do not (Pizam & Pokela 1978; Schluter & Var 1988; Mehta & Kellert 1998). This study examined the perceived distribution of benefits within communities and the effect of this on support for tourism, as well as the effects of demographic factors that may intrinsically effect attitudes towards tourism (Haukeland 1984; Brayley, *et al*. 1990; Bastias-Perez & Var 1995). This paper also considers how tourism could be improved, based on patterns of local attitudes.

The focus of this study was Komodo National Park (KNP) in Indonesia. Much of the research into people-park relations in developing countries, including the role of tourism, has focused on Africa and to some extent South America. Asia has less of a history of nature-based tourism than Africa, but its protected areas are increasingly being targeted as tourism attractions. Indonesia has the largest number of protected areas of any country in South-east Asia (105 IUCN category I and II protected areas, compared with 73 in Thailand and 43 in Malaysia (IUCN 1997)), and has been actively promoting tourism throughout the past decade (Hitchcock 1993). Moreover, the link between protected area conservation and local community well-being in Indonesia is receiving more attention in park development plans than was previously the case (Walpole 1997). Komodo National Park is a flagship for protected area tourism in Indonesia, and surrounding tourism development is accelerating to the point where it is now a significant local economic sector (Walpole & Goodwin 2000). If this is to serve as a national and regional example of sustainable tourism, then, among other things, it is important that local support and goodwill for conservation are nurtured. Without such support, the environmental resource upon which tourism is based may be threatened.

Methods

Site profile

Komodo National Park (119°30′ E, 8°35′ S) is located in the Lesser Sunda Islands of Indonesia, in the province of East Nusa Tenggara. Lying in the Sape straits between Flores and Sumbawa, it comprises the three islands of Komodo, Rinca and Padar, and smaller surrounding islands, plus the straits between the main islands and all waters within 1000 m of shore (Fig. 1). KNP is best known for the Komodo monitor, *Varanus komodoensis*, known locally as *'ora'* and colloquially termed 'Komodo dragon'. Discovered in 1910, its total population is not more than 3000 individuals, with a very limited distribution. It is found only on the islands of Komodo, Rinca, Gili Motang, Gili Dasami and in certain coastal regions of western and northern Flores (Auffenberg 1981; C.Ciofi, personal communication 1999).

Tourists have travelled to the islands since the discovery of

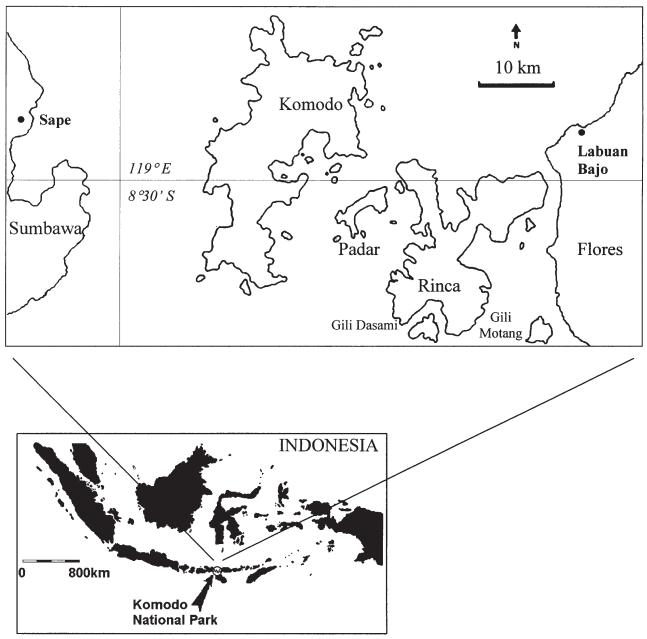

Figure 1 Map of Komodo National Park and gateway towns.

the Komodo dragon, which remains the principal attraction (Hitchcock 1993). Since KNP was formally established in 1980, tourism has grown steadily. In the 1995/96 financial year, almost 30 000 arrivals were recorded. Of these, 93% were foreign tourists, consisting mainly of European and North American visitors (Walpole 1997). It should be noted that tourism in KNP is essentially terrestrial, whilst management and conservation are concerned with both terrestrial and marine components of the Park. Indeed, conservation of the marine component has received much attention in recent years.

There is limited accommodation for visitors within KNP, and most tourist development is confined to two gateway towns; to the west, the town of Sape on Sumbawa, and to the east, the town of Labuan Bajo on Flores (Fig. 1). Apart from cruise ship passengers, who constituted 40% of KNP arrivals in 1995/96 (Walpole 1997), all visitors to KNP pass through either one or both of the gateway towns. Both towns have approximately 5000 residents, those in Sape are of Bugis and Bimanese origin, while those in Labuan Bajo are Manggarai and Bugis. Javanese and Chinese entrepreneurs are present in both towns. The dominant economic activity in the area is fishing (Sudibyo 1995). The two towns have developed differently with regard to tourism. Labuan Bajo is the major focus of tourism development. Besides having superior transport facilities, including an airstrip and deep water harbour, Labuan Bajo is closer to the islands of KNP. From Sape you have to cross a deepwater strait with strong currents, and hence access to the Park is easier from Labuan Bajo. As a result, retail and service enterprises aimed specifically at foreign tourists have centred on Labuan Bajo. Sape is essentially a transit terminus for the interchange of bus and ferry passengers, with some charter boat departures. Simple

accommodation and restaurant facilities are available, but these cater mostly for domestic business visitors rather than foreign tourists. Of the two towns, Labuan Bajo accounted for over 95% of estimated tourist bed nights (33 000) and 80% of tourist expenditure (*c*.US$ 800 000) in 1995/96 (Walpole & Goodwin 2000).

Data collection and analysis

A structured questionnaire was distributed to 401 households, 201 in Sape and 200 in Labuan Bajo, during August 1996. Six random starting points were selected in each town in each of six residential areas, and every other house along each street was visited. Alternate male and female respondents were selected for interview. Interviews were conducted in Indonesian by trained local enumerators (four in Sape, six in Labuan Bajo). These enumerators were trained by an experienced trainer from the Indonesian Department of Forest Protection and Nature Conservation (PHPA). Each had conducted similar house to house surveys in previous studies. Every enumerator was accompanied on pilot interviews to ensure that they were conducting the survey to the same standard methodology. If a house was not occupied then it was omitted and the next but one house visited. If the correct gender of respondent was not present then a member of the opposite gender was interviewed and gender was alternated again from there on. This resulted in a balanced distribution of respondents by gender (208 male and 193 female).

After a series of demographic questions (age, sex, profession, number of children, place of birth), respondents were asked about their contact with tourists and their involvement in the tourism industry. A series of dichotomous (yes/no) questions were then asked regarding respondents' attitudes towards conservation and tourism. These were posed as statements to which respondents were asked to agree or disagree (cf. Nepal & Weber 1995). Three categories of question were asked: (1) questions regarding respondents' general attitudes towards tourism and conservation; (2) questions regarding the distribution of benefits and costs of tourism, and (3) questions regarding the cultural impacts of tourism. Questions were selected after workshop discussions with community representatives regarding the local impacts of tourism. These workshops were conducted several months prior to the survey, and representatives had no knowledge that a survey would subsequently be implemented. Thus it is unlikely that survey respondents could have been 'tipped off' in advance about particular questions that would be asked. This ensures independence between survey respondents.

Analysis was conducted using SPSS ver 8.0 (Statistical Package for the Social Sciences, SPSS Inc., Chicago, IL 60606, USA. URL http://www.spss.com). Relationships between dependence on tourism and individual attitude questions, and between attitude of conservation and attitudes towards tourism, were analysed using the chi-squared test. Logistic regression was used to identify demographic factors related to dependence upon tourism. Answers to 11 questions regarding tourism were combined into a single additive score. Positive answers were scored 1 and negative answers 0, and the answers summed to give a score ranging from 0 to 11, with a higher score indicating a more positive overall attitude. The internal consistency of this measure was examined using Cronbach's alpha (Mehta & Kellert 1998). This lies between 0 and 1, with higher values indicating higher internal consistency. Differences in the mean score between those dependent and not dependent upon tourism for income, and between those with positive and negative attitudes towards conservation of KNP, were analysed using two-sample t-tests. In addition, stepwise multiple regression was used to examine the contribution of other demographic factors to overall attitude towards tourism. For t-tests and regression, the score variable was logarithmically transformed to fit the assumption of normality required for these tests.

Results

Characteristics of sample

96.3% of males were engaged in some form of employment, whilst only 33.5% of females were employed outside the domestic household. The most common form of employment was trader/businessperson (41.1%), followed by fisher (30.8%), farmer (11.1%), professional (doctor, lawyer, teacher, etc., 8.7%) and skilled labourer (builder, carpenter, etc., 8.3%). There were significant differences in the distribution of birthplace between categories of employment (χ^2 (18) = 37.9, $p < 0.01$). Fishers and farmers were more likely to be born within the local subdistrict, whilst traders and businessfolk were more likely to be born outside the local subdistrict. In addition 'housewives' were more likely to be born within the local subdistrict. These results suggest that local people are more likely to adhere to traditional gender and employment roles, whilst settlers, both male and female, are more likely to enter the developing commercial sector. No significant differences with regard to place of birth were found between the sexes or in age or number of children.

Experiences of tourism among the community

The majority of respondents had no contact with or derived benefits from tourism. Only 30.4% of respondents stated that their families were dependent upon tourism for part of their income. Equally, 28.9% of respondents had spoken to tourists, whilst 22.1% had sold goods to tourists. Very few had provided guiding or other services (3.5% and 15.1% respectively). Significantly more respondents in Labuan Bajo than in Sape were dependent upon tourism (χ^2 (1) = 75.5, $p < 0.0001$). Stepwise logistic regression revealed Labuan Bajo residents, traders/businessfolk and younger respondents to be significantly more likely to be dependent upon tourism (Table 1).

Table 1 Logistic regression of relationship between demographic variables and dependence on tourism (n = 377). B = regression coefficient, SE = standard error, *Wald* = Wald statistic, p = significance. Overall fit of predicted to observed results = 76%.

Variable	*B*	*SE*	*Wald*	*p*	*R*
Town (Labuan Bajo)	1.82	0.28	40.96	0.001	0.29
Profession (trader)	1.06	0.27	15.10	0.001	0.16
Age (older)	−0.04	0.01	9.12	0.01	−0.12

Attitudes towards conservation

Support for conservation was very high, with 93.7% of respondents agreeing that 'it is good that Komodo National Park is protected by the government'. The majority of respondents (90%) also agreed that 'tourists come here because of Komodo National Park'. Thus the hypothesis that people recognize the link between tourism and conservation can be accepted.

Attitudes towards tourism

Overall, respondents held a positive attitude towards tourism. Most would be happy to see more tourists (92.7%) and for their children to work in tourism (88.9%). Few respondents felt that tourism was eroding traditional customs (18.5%), although around one-third felt that tourism was damaging their culture (32.2%) and half did not like the way that tourists dress (51.8%). There were mixed feelings regarding the distribution of benefits from tourism. Although some respondents felt that only outsiders benefited from tourism (24.1%), half felt that the whole community benefited from tourism (51.1%). A similar proportion felt that only rich people benefited (47.4%), and few respondents felt that tourism benefited their family or increased their income (27.3% and 23.0%). Half of the sample felt that tourism had caused prices of goods and transport services to rise (49.6%). The mean score on the 11 point attitude scale was 6.6, indicating an overall positive attitude towards tourism. The scale had an acceptable level of internal consistency (Cronbach's alpha = 0.61, cf. accepted values of 0.63 and 0.68 in Mehta & Kellert 1998).

Relationships between tourism benefits and tourism attitudes

Responses to eight out of the 11 questions regarding tourism attitudes revealed significant differences between those dependent upon tourism and those not (Table 2). For seven of these, those benefiting from tourism were significantly more likely to answer positively. Only for the question regarding prices were those benefiting from tourism more likely to give a negative answer and say that prices had risen. Those dependent upon tourism had a significantly more positive overall attitude than those not dependent upon tourism ($t_{349} = 6.48$, $p < 0.001$). Equally, dependence upon tourism was the most important factor explaining attitude score in the multiple regression model ($F_{7,349} = 19.1$, $p < 0.001$, $R^2 = 0.278$). Six other variables were included in the model, in the following order; town, age, sex, dichotomous variables for fishers and farmers/labourers, and whether or not respondents had spoken with tourists. Those dependent upon tourism and who had spoken with tourists, residents of Labuan Bajo, older residents and female residents were more likely to have a positive attitude, while fishers and farmers/labourers were less likely to have a positive attitude.

The relationship between town and attitude score was examined further. There was no significant difference in mean score among those residents dependent upon tourism in Labuan Bajo (7.40 ± 0.19) and Sape (7.75 ± 0.23), but among those not dependent upon tourism the attitude score was significantly lower among Labuan Bajo residents than Sape residents (Labuan Bajo 4.84 ± 0.28, Sape = 6.88 ± 0.11, $t_{254} = 8.01$, $p < 0.001$). In both towns, those dependent upon tourism had a significantly higher score than those not dependent (in Sape, $t_{183} = -2.58$, $p < 0.01$; in Labuan Bajo, $t_{184} = -7.67$, $p < 0.001$).

Relationships between tourism benefits and attitudes and support for conservation

For seven out of the 11 tourism attitude questions, those with a positive attitude towards tourism were significantly more likely to support conservation of KNP (Table 2). For the remaining four questions there was no significant difference. Those supporting conservation had a significantly more positive overall attitude towards tourism ($t_{381} = 4.88$, $p < 0.001$). These results suggest that those with a positive attitude towards tourism support conservation of KNP. However, those dependent upon tourism for part of their income were significantly less likely to support conservation of KNP (χ^2 (1) = 7.09, $p < 0.01$). This suggests that the main hypothesis of the study, that receipt of benefits from protected area tourism results in greater support for conservation, be rejected.

Discussion

The contribution of tourism to conservation and local communities

Tourism as a conservation and development tool is promoted on the basis of a number of assumptions. From a conservation perspective it is expected to be environmentally sustainable and to provide tangible benefits to protected areas in the form of revenues to be used for conservation and management. From a community perspective, it is expected to provide equitable benefits that consequently enhance local support for conservation (Goodwin 1996). In this study, respondents showed almost unanimous support for conservation of KNP, and recognized the link between the Park and the existence of

Table 2 Responses to statements regarding tourism by those who were dependent and not dependent upon tourism for family income, and by those who supported and did not support conservation of Komodo National Park (KNP).

Statement	*Agreement with statement (%)*			*Agreement with statement (%)*		
	Tourism dependent	*Not tourism dependent*	*Chi-squared significance (p)*	*Supported conservation*	*Did not support conservation*	*Chi-squared significance (p)*
I would be happy to see more tourists here	98	91	<0.05	93	76	<0.001
I would be happy for my children to work in the tourism industry	89	87	<0.88	92	36	<0.001
Tourism benefits my family	59	12	<0.001	27	28	<0.95
My family has more money because of tourism	35	16	<0.001	24	16	<0.4
Tourism benefits the whole community	57	47	<0.07	51	48	<0.75
Only outsiders benefit from tourism here	17	28	<0.05	22	52	<0.001
Tourism only benefits rich people	23	58	<0.001	47	48	<0.95
Tourism has caused prices to rise*	64	42	<0.001	48	84	<0.001
I do not like the way that tourists dress	53	52	0.7	50	84	<0.001
Tourism causes young people to reject traditional customs	22	36	<0.01	30	64	<0.01
Tourism is damaging our culture	11	22	<0.01	17	36	<0.05

* A further open question revealed goods and transport services to be the main items that were perceived to have increased in price.

the local tourism industry. However, those directly benefiting from tourism appeared to show lower than expected support for conservation. The latter result is counter-intuitive, and implies that benefits from tourism do not result in increased conservation support. This may be due to the presence of other forms of relationship between local people and conservation other than tourism, that may have a stronger effect on conservation attitudes than tourism does. If residents have had negative experiences of the Park or its authorities, then, despite gaining benefits from tourism, they may still view the Park negatively. Local interactions with KNP and its authorities, other than indirectly through tourism, were not investigated in this study but may play an important role in shaping local attitudes both here and elsewhere.

Respondents with positive attitudes towards tourism were more likely to support conservation of KNP. This may be a result of respondents answering in a generally positive or generally negative way regardless of the topic. This is not an issue that has received much attention but is important when considering the validity of social surveys such as this.

Despite generally positive attitudes towards tourism, few local people believed that they benefited from tourism or had much contact with tourists. This agrees with economic distribution analyses conducted in the same area (Walpole & Goodwin 2000). Whilst residents recognized some of the distributional inequalities present within the tourism industry locally, they had few complaints about tourism other than its effect on inflation and tourist dress code. This overall positive attitude may be attributable to the early stage of development of tourism locally (Walpole & Goodwin 2000). When tourism begins to develop there may be a period of expectation during which attitudes are positive in anticipation of future benefits (Doxey 1975). It may not be until later in the tourism development lifecycle, as negative impacts increase and benefits fail to match expectations, that attitudes become less favourable. Residents living closest to tourism developments, with more immediate experience of the negative social and environmental aspects of such development, are more aware of the negative impacts than those living further away (Perdue *et al*. 1990; Wall 1996). Equally, those living in areas with a more developed tourism industry tend to have a more negative view of tourism, as studies in Europe and America suggest (Haukeland 1984; Liu *et al*. 1987).

Those respondents who economically benefited from tourism were more positive about tourism than those without such benefits. This finding corroborates that of other studies (Pizam & Pokela 1978; Schluter & Var 1988; Mehta & Kellert 1998). In the study reported here, it was also found that, among those not benefiting, attitude was more negative in the town that received most tourism benefit. This might suggest that, as benefits to an area increase, those not receiving a share of the benefits become more disenchanted with tourism and display more negative attitudes (cf. Dogan 1989). Furthermore, demographic results suggest that locally-born residents participated less in developing-urban sectors than immigrants from elsewhere in Indonesia, and as a result their levels of contact with tourists and the proportion receiving economic benefits from tourism was less, and their attitudes towards tourism were less favourable. This suggests that tourism is not targeting the most local of local residents, such as farmers and fishers, in gateway communities adjacent to protected areas. These are the people most likely to be dependent upon natural resources and consequently those whose

support for conservation is most needed if areas are to remain protected. There is clearly scope for improvement in benefit distribution from tourism, and this is an issue that tourism planners need to address.

It may also be the case that ethnic differences between the two towns play a part in the differences in attitude. It has been shown elsewhere that ethnicity can affect attitudes towards outsiders, including tourists (Hitchcock 1995). Ethnicity was not included as a factor in this study, but its potential importance means that it should be borne in mind when considering local attitudes in any multicultural community.

Recommendations for planners and managers

This study has revealed patterns in local attitudes towards conservation and tourism that inform the debate over tourism and suggest avenues for improvement and further research. Although the findings should be considered only within the specific cultural and geographical parameters of the study area, some recommendations can be made that may be broadly applicable to similar scenarios elsewhere.

First, it is clear that benefits from tourism are unequally distributed (see Walpole & Goodwin 2000) and that this is recognized by local people and may influence their attitudes towards tourism. As far as possible, planners and managers must ensure a fair and equitable distribution of benefits. Both in this area and elsewhere, those that benefit have been found to be local elites or outsiders, while few jobs or opportunities fall to the majority of local people (Goodwin *et al*. 1998; Walpole & Goodwin 2000). If tourism is to play a part in sustainable development around protected areas, then distributional inequalities need to be addressed. This might be achieved by targeting training programmes and micro-credit arrangements at certain sectors of the community, and by ensuring that tourism development does not follow enclave practices that limit local access to the tourism market.

Secondly, although attitudes are generally positive, local people do recognize some cultural impacts, most noticeably an incompatible style of dress among international (mainly Western) visitors. Tour operators and ground handlers, as well as park authorities, could take greater steps to increase visitor awareness of the impacts they might have on local communities such as those surrounding KNP that are predominantly Muslim and have had little contact with foreign cultures. A greater cultural sensitivity in the way that visitors behave could be engendered.

Thirdly, although this study did not reveal many negative attitudes, it was undertaken at an early stage in tourism development. Patterns of attitude, both of tourism and of conservation, may change as tourism develops (Doxey 1975). It is therefore important that longitudinal monitoring of the performance of tourism, at ecological, economic and social levels, be implemented. This study did not demonstrate that tourism benefits engender support for conservation. More detailed studies, taking into account other relationships between people and parks, and ethnicity, and conducted longitudinally over time, might provide greater insights into the mechanisms that shape local attitudes towards conservation in this region and elsewhere.

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