

## **Climate Change Mitigation among Accommodation Providers in the South West of England: Comparisons between Members and Non-Members of Networks**

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### **Introduction**

This paper explores the relationship between network membership and innovation towards more sustainable tourism development. In particular it examines the extent to which tourism businesses have introduced measures to mitigate the effects of climate change within their operations.

In recent studies of the changing dynamics of the tourism sector, the concepts of innovation and knowledge transfer have featured prominently (Shaw and Williams 2009; Hall and Williams 2008). In a growing body of knowledge, it is argued that innovation among businesses and organisations is vital in order to be able respond to contemporary challenges, in particular in the area of sustainable tourism (Hjalagar 1996, 1997). New challenges require original interventions. For instance, although innovation is a fuzzy concept with multiple and contested meanings (Coles et al 2009), recent studies have highlighted its importance in both mitigation of, and adaptation to, climate change (Hall 2006; Saarinen and Tervo 2006). In other words, the more innovative businesses become the greater their ability to respond successfully. Innovations may be relatively modest in scope, such as converting to A-rated appliances or adding insulation. Alternatively, they may be radical and associated with new technologies or inventions, such as using Photovoltaic cells, so-called 'Smart Metering' or the latest wood chip boilers. Businesses innovate at different rates but the key challenge, as so-called 'Wedge Theory' (Stern 2007) acknowledges, is to encourage as many businesses as possible to innovate towards mitigation and as soon as practicable. Otherwise under 'business as usual' scenarios total emissions are likely to continue to rise in a sector that already accounts for around 5% of global CO<sub>2</sub> emissions (UNWTO 2007).

Innovation seldom takes place in perfect isolation. Businesses and organisations are better placed to respond to contemporary challenges where they exchange knowledge in the form of information, experiences, skills, expertise, best practices and technological insights. Networks offer a medium for such exchanges. Conventional wisdom suggests that the more extensive and/or efficient the network, the greater the likelihood for circulation to the benefit of all members. As sustainable development is in the common good, networks would appear an ideal means to encourage the spread of more responsible and innovative practices. Not surprisingly, a variety of networking

arrangements, architectures and interactions have been identified as a means by which to enhance the delivery of sustainable tourism (Bramwell and Lane 2000; Coles 2008).

As a result, a number of associations, organisations and professional bodies at a range of geographical scales from the local to the supra-national have been established in order to promote the principles and practices of sustainable development in tourism. By implication, if the mission of such networks is to facilitate knowledge exchange to encourage change, it is reasonable to assume that members should exhibit enhanced levels of awareness of and practices in sustainable business issues (if the network functions efficiently and/or is adding value). There have, though, been few attempts to examine empirically the extent to which members practice the principles of sustainable business compared to non-members. In short, the specific research question which is addressed by this short paper is 'does network membership really result in higher levels of sustainable business practice in tourism, in particular in the area of climate change mitigation?'

## **Methods**

This paper reports on the first stage (of two) of a year-long programme of research on the theme of climate change mitigation and business innovation in the tourism sector. A mixed methods strategy was adopted in the project. The first stage comprised quantitative analysis based on an extensive questionnaire distributed to accommodation providers and attractions, with a second stage of semi-structured interviews to examine the attendant issues in more depth. At the time of writing (February 2010), the interviews and their analysis had not been completed.

The purposes of the questionnaire were to benchmark current environmental practices towards climate change mitigation; to examine how environmental measures feature in business plans currently and moving forward; and to gauge the extent to which measurement and monitoring were being routinely conducted. The South West was chosen because it is the only region to place sustainable development as one of its three strategic pillars for regional tourism strategy (SWT 2005); it has led the policy agenda on tourism and climate change in the UK (Coles 2008); and well over a third of the members (38%) of the Green Tourism Business Scheme (GTBS) –one of the principal accreditation and benchmarking schemes for sustainable tourism- in England are located in the region (GTBS 2010).

The questionnaire comprised 31 questions in three sections. The first section explored general attitudes of businesses towards the environment, the second section interrogated the environmental practices in each business, and the final section examined the basic operating characteristics among the surveyed businesses as a series of potential explanatory variables.

Here respondents were offered the opportunity to declare their membership of six common tourism networks or associations as well as to enter others in which they participate. Four of the networks mentioned (Visit Britain, Green Tourism Business Scheme, David Bellamy Conservation, and AA Quality assurance) were included because of relatively widespread membership as well as their encouragement of the principles of sustainable development.

The questionnaire was administered online in conjunction with the regional tourist board, Southwest Tourism. From a response rate of 8.9% to emailed invitations, 417 usable responses were received from accommodation providers of different types which are discussed in the remainder of this paper. Although by no means a complete census, Southwest Tourism suggests there are around 14,970 accommodation providers in the region and hence this sample contains around 2.8% of the background population. It is beyond the scope of this paper to provide an extensive discussion of the sample characteristics. Responses were received from many small- and medium-sized tourism enterprises that dominate the sector in the region, and among which were serviced accommodation (small hotels, B&Bs) as well as self-catering accommodation (apartments and camping grounds) and caravan and touring parks (table 1).

Table 1: Selected Characteristics of the Respondents

Characteristic	Value
Average number of employees -full-time equivalents	3.2
Average turnover in 2009	£60k
Average % occupancy in 2009	53.4%
Members of a tourism network (%)	385 (92.3%)
Average length of business in current ownership	10.4 years
Average number of innovations made in last 10 years	8.2
Average number of planned innovation in next year	3.2
Average investment over past 10 years	£9.1k
Average proportion of costs as energy bills	14.8%
Average proportion of costs as water bills	6.8%

Source: authors' fieldwork (November 2009)

Evaluations of coverage and bias among online surveys are tricky in so far as respondents are self-selecting. Checks for respondent bias were performed, and the sample set was not skewed by over-reporting of innovative practices. In fact, other (to date unpublished) research from this

project has confirmed that there was a range in the level of innovation to mitigate climate change, with some respondents demonstrating a remarkable lack of progress (table 1).

## **Findings**

One of the most remarkable results of the survey was the extent to which respondents reported membership of tourism networks (table 1). Over 90% were members of at least one network or more, with less than one in ten accommodation providers in the South West not a member of an association of some type. On average, each participating business was a member of 1.5 networks. The great majority (n=326, 84.7%) claimed to participate in the quality assurance schemes run by Visit Britain, the national tourism organisation for the UK, while just over a fifth (n=85, 22.1%) participated in the Automobile Association's (AA) scheme. Around 15% (n=57) were members of the GTBS, while 2.3% (n=9) participated in the David Bellamy Conservation Scheme ostensibly for holiday parks. 29.4% (n=113) of businesses participated in their local trade associations (i.e. resort associations, chambers of trade and commerce).

These high levels of network membership may in part be a function of the sampling although businesses in the South West may have a higher propensity to join networks (such as GTBS). Notwithstanding, these data would suggest that networks are in principle a major component in the organisational and administrative fabric of the tourism sector in the South West of England. Hence, networks would appear to have an important role to play in knowledge exchange regarding sustainable tourism in general and climate change mitigation more specifically.

This hypothesis was tested in two respects. First, Mann-Whitney U-tests were run between members and non-members of networks. These looked for differences in the number of innovations introduced from a range of 20 measures that are commonly associated with climate change mitigation (U=5177, p=0.132); the total investment across six broad categories of innovation (U=5873, p=0.661); and the average investment per category (U=4882, p=0.668). The 20 mitigation measures varied from routine and common innovations such as recycling, double and triple glazing, and insulation to (relatively) more advanced responses such as solar energy, grey water use and wood-chip boilers. The list was compiled from the most frequently-mentioned mitigation measures (some more direct and obvious than others) in a range of practitioner and policy documents urging businesses in the UK, as government advertising exhorts, 'to act on CO<sub>2</sub>'. The six broad categories of innovation for climate change mitigation were: roof insulation; wall insulation; efficient heating systems; renewable energy technologies; efficient appliances and fittings; and double glazing.

No significant difference was observed in any of the three tests. In other words, innovation to mitigate climate change was not significantly higher among members of networks compared to non-members. On average, businesses had introduced an average of 8.2 innovations over the past decade which, coincidentally, was the average period in which businesses had been under current ownership (table 1). The respondents also claimed to be introducing as many as a further 3.25 over the forthcoming year, although this whether this will actually transpire seems somewhat debatable *in lieu* of their historical track records. As table 2 reveals, the most commonly-introduced innovations were relatively 'easy wins'; that is, practices that were relatively well-established and incontrovertible as well as reasonably cheap to introduce and not requiring specialist knowledge. Very high levels of recycling were reported as well as greater insulation. The introduction of more efficient boilers may partly be a function of a recent UK government incentive scheme to enhance energy efficiency while A-rated appliances were routinely purchased by two-thirds of the sample. Just over a half of businesses asked their customers to reuse their towels, not to expect freshly-laundered ones each day.

More strategic approaches to mitigation were evident but among a minority of businesses. Just under a fifth had appointed an employee with responsibility for environmental matters, and around a quarter claimed to have developed environmental plans. Newer technologies, such as smart metering and power-control room-key systems as well as renewable energy sources were seldom adopted. Interestingly, the only significant differences among members and non-members were in the extent of recycling non-biodegradable waste and in the use of A-rated appliances. In both cases, members had higher levels of implementation.

The relationship between network membership and innovation was examined in a second respect, namely: to explore whether there was any within-sub-sample variance among network members. Two separate Spearman Rank Correlations were conducted on the extent of network membership with the number of innovations enacted over the past decade and the total volume of investment in the six common innovation measures respectively. The level of network membership was positively correlated with the number of innovations introduced ( $r=0.259$ ,  $p=0.000$ ). The data would suggest that the greater the level of network membership, the greater the number of innovations that are introduced. Nevertheless, it should be noted that this is approaching a medium effect ( $r=0.30$ ; Field 2009: 57, 170) which broadly accounts for just 6.7% of the variability. Moreover, the level of network membership did not correlate with the volume of investment ( $r=0.073$ ,  $p=0.153$ ).

Table 2: Mitigation measures enacted by tourism businesses

Measure	% Members	% Non-members	% Sample
<b>Recycle non-biodegradable waste</b>	<b>95.6</b>	<b>84.4</b>	<b>94.7</b>
Recycle biodegradable waste	93.8	84.4	93.0
Loft insulation	83.6	71.9	82.7
Efficient boilers	70.2	65.6	69.9
<b>A-rated appliances</b>	<b>69.1</b>	<b>43.8</b>	<b>67.1</b>
Double/triple glazing throughout	64.9	71.9	65.5
Water saving devices	62.1	62.5	62.1
Towel agreement	52.5	43.8	51.8
Efficient showerheads / taps	52.5	40.6	51.6
Environmental management targets	38.2	28.1	37.4
Cavity wall insulation	32.5	18.8	31.4
Environmental management plan	24.2	12.5	23.3
Appointed environmental manager	17.9	18.8	18.0
Switched to green energy supplier	17.4	18.8	17.5
Smart metering	15.6	21.9	16.1
Solar-powered heating	10.1	12.5	10.3
Solar energy panels	9.4	6.3	9.1
Grey water system	8.1	6.3	7.9
Power-control room key	6.8	0.0	6.2
Wood chip boiler	2.9	0.0	2.6

Source: authors' fieldwork (November 2009)

Bold denotes significant difference in Chi-square test of association ( $p < 0.05$ )

Instead, it would appear that individual business operating parameters and conditions are a more likely driver behind differences in adoption (table 3). Both members and non-members by and large agreed that the economic case and business benefits are most important in encouraging greater mitigation if they can be clearly demonstrated. The popularity of grants to help with

monitoring was also important and they may be perceived in a similar positive manner to the UK government's recent boiler scrapage scheme for residential households. In only three areas were significant differences identified among members and non-members of networks. Members of networks would be more likely to mitigate further if messages in the media were more trustworthy, if advice were more co-ordinated, and there were demonstration examples available. Importantly, these are all functions that networks could provide for tourism businesses.

Table 3: Drives for doing more to address climate change

We would do more to address climate change if:	Member *	Non*	Results†
The economic case was clearly proven	4	4	1.069, 416, 0.586
There were greater business benefits to us	4	4	0.769, 417, 0.681
There were grants to help with monitoring	4	4	3.671, 417, 0.152
<b>Messages in the media were more trustworthy</b>	<b>3</b>	<b>4</b>	<b>9.129, 416, 0.010</b>
It was easier to understand our [utilities] bills	3	3	0.309, 417, 0.857
We had equipment to monitor energy use	3	4	3.782, 417, 0.151
<b>There was a clear one-stop shop for advice</b>	<b>3</b>	<b>4</b>	<b>9.326, 417, 0.009</b>
<b>Best practice examples were available</b>	<b>3</b>	<b>4</b>	<b>9.339, 417, 0.009</b>
We had equipment to monitor water use	3	4	4.147, 416, 0.126
Our trade association recommended it to us	3	3	4.974, 416, 0.083
Our main competitors did more than us	3	3	0.147, 417, 0.929
Competitors gained advantage by doing more	3	3	1.291, 413, 0.525
We had more time	3	3	5.162, 416, 0.076
We were forced to by law	3	3	1.653, 417, 0.438
There was free access to training	3	3	3.597, 414, 0.166
By doing nothing, our business may be threatened	3	3	2.124, 416, 0.346

Source: authors' fieldwork (November 2009)

\* Mode on 5-point Scale (1=strongly disagree, 3= neither agree nor disagree, 5=strongly agree).

† Chi-square test statistics, number of observations in total, probability level. All based on reduction to 3-point scale, degrees of freedom = 2 in order to ensure meets criteria of test.

## **Application of the results**

There are three broad consequences from this research for policy and praxis. The first is purely from a perspective of climate change mitigation. The results of this research would suggest that, despite the importance of innovation in achieving greater mitigation, to date there has been only relatively limited progress in this regard. Policy and praxis have to encourage greater climate change mitigation in the tourism sector. Many businesses have made a series of modest innovations, without committing to more structured or planned activities to address climate change, fewer still towards the adoption of the latest technological solutions. Without greater levels of innovation, the tourism sector in the form of accommodation businesses is very unlikely to be able to contribute towards stabilisation or reduction of emissions levels.

The data point to the important role that networks may play in the future in facilitating climate change mitigation for their members. Membership of one or more network is after all relatively high. Networks routinely encourage more structured approaches to delivery and they provide relevant operational data through analogues and champion businesses. Getting the messages right is going to be crucial because there remains uncertainty and scepticism in public discourse about the importance of climate change. Network members valorise trustworthy, co-ordinated and analogue data to inform their decisions. Economic drivers would also appear to be especially important in inducing change. The benefits of investment have to be demonstrable and incontrovertible. The sector is dominated by SMTEs that are traditionally recognised as risk-averse, under-financed and operated for lifestyle reasons (Shaw 2004).

A second consequence is the need to ensure far greater co-ordination of messages from and among networks. Some of the observed variability among the network members may be a function of competing and sometimes conflicting aspirations to which businesses are simultaneously responding but at different speeds. Businesses participate in 1.5 networks on average. Cross-referral among networks may be one welcome approach to ensure a greater clarity of collective message by reducing duplication or conflict. However, this requires careful co-ordination and the climate change implications need to be fully thought through. For instance, Visit Britain endorses the GTBS as world-leading accreditation for sustainable tourism (Visit Britain 2010) but it also simultaneously endorses its own parallel entry-level scheme called 'Green Start'. For many businesses, the differences between it and GTBS bronze level may not be immediately evident, nor may the benefits of participating in the latter. Moreover, Visit Britain is committed to increasing the quality of the tourism product in the UK (ahead of the 2012 Olympic Games in London). In theory at least, the potential may exist of businesses aspiring to apparently mutually incompatible goals: aspiring to GTBS bronze level or Green Start through modest levels of innovation, while



upgrading facilities to obtain higher quality status to assist their marketing efforts. The drive up-market requires greater levels of facilities which, in turn, may place greater pressure on energy and water resources. Without greater climate change mitigation, the drive up-market may lead to a series of small additions, not reductions to emissions.

A final consequence relates to the lack of difference observed between members and non-members as well as within the member sub-sample. The traditional justification for professional networks is that, in exchange for a membership fee, members receive competitive advantages over non-members, for instance in terms of a combination of branding, revenue generation and cost-reduction. The data presented here could be interpreted as a failure of the networks to deliver 'value-added' for their members in terms of climate change mitigation. With the exception of the GTBS, climate change does not feature prominently on their WWW landing pages. For GTBS, it features primarily through mitigation (and adaptation) measures.

Rather than focus exclusively on the role of membership schemes for their members, the lack of difference also raise the prospect that networks may fulfil an important role in shaping the overall culture of 'doing business' in tourism. 'Knowledge spillovers' outside network boundaries may be an important mechanism in this regard. Members have to adhere to certain principles in order to qualify for membership or for particular levels of accreditation, as in the case of the GTBS. Businesses join networks and they leave them. They leave them for a whole host of reasons such as a lack of time to participate, the expense of membership, perceived lack of value for money, and disagreements over direction and relevance to the business. Whatever their reasons for leaving, they take with them accumulated and sedimented knowledge as well as particular levels of activity. They may not continue to operate at precisely the same level of activity as when they were members (this may be the reason for leaving). However, they continue many of the practices. Aspirations, mission statements and the principles of membership for schemes like GTBS are in the public domain. They are also available to non-members through interaction with members in their peer-group or in other networks in which they both participate. In short, this research suggests that networks have the potential to encourage all businesses through a series of direct and indirect means to enhance their environmental performances to broadly similar levels.

## **Conclusion**

The main finding of this research is that climate change mitigation among accommodation businesses in the South West of England is relatively modest, and based primarily on a series of 'easy wins'. No significant differences were obvious in the levels of mitigation practiced by

members and non-members of networks. The sample size is relatively large for a survey of its type and the study raises three consequences for policy and praxis. The first is to encourage greater mitigation efforts if the tourism sector –and more specifically, accommodation providers– are going to contribute more effectively to the stabilisation (and possible reduction) of emissions over time. Second, network membership of itself or alone would appear not to be a major driver behind greater climate change mitigation. This is not to suggest that networks lack importance in the creation and dissemination of knowledge on climate change mitigation. On the contrary, networks have great potential to stimulate behavioural change because basic levels of network membership are relatively high. However, there is a need to ensure greater that climate change features more prominently in network messages and in a far more co-ordinated manner. Finally, the influence and reach of networks and their advocacy may extend further than their current membership through ‘knowledge spillovers’. Networks are fluid and dynamics entities. Members join and members leave. Static, snapshot analyses document the importance of a network at a single moment, however there is a clear need to explore how membership mediates knowledge exchange.

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