Responding to Climate Change in Australian Resort Hotels: Setting a Research Agenda for Water, Energy and Waste Management

Charles Arcodia and Chantal Dickson

Abstract

Climate change caused by global warming is a critical environmental challenge facing the world of the 21st century. The most widely accepted scientific explanation attributes rising average temperatures of the Earth's near-surface air and oceans to increases in concentrations of anthropogenic greenhouse gases (IPCC, 2007). Hotel facilities are ranked among the top five in terms of energy consumption in the commercial/service building sector (minor only to food services and sales, health care and some office types)(U.S. Energy Information Administration in Bohdanowicz & Martinac, 2007). Waste accounts for a significant portion of energy use in this sector, providing good reason for enhancing energy-efficiency and resource conservation. With 75% of primary energy in Europe, for example, derived from fossil sources, the sector's contribution to global environmental problems, including global warming and climate change is not negligible (Bohdanowicz & Martinac, 2007).

Common concern about the impacts of climate change is a relatively recent phenomenon in Australia. Consequently, there is little, research on what it might mean to hotels and what they should do about it. CSIRO's (2007) predictions indicate warmer average temperatures, lower rainfall, drying caused by increased temperatures and evaporation, higher tropical cyclone wind speeds, and higher precipitation rates. A survey of remote Queensland resorts by Kavanah (2002) for example, recorded water saving measures ranging from the collection and use of rainwater, grey water separation, dry composting toilets and water recycling. Although these measures showed a significant cost benefit, the adoption of practical water saving solutions in these resorts was slow. Severe ongoing drought throughout the country has focused national attention on saving water and many hotels have subscribed to the Queensland government's Business Water Efficiency Program (SEQ Water 2007). Water conservation is an essential adaptive measure since the hotel industry depends on an adequate supply of good quality water (Draper, 1997; Essex, Kent & Newnham, 2004; Pigram 2006). Shortages and a decline in quality can significantly reduce tourist numbers and directly affect local economies (Batle, 2000).

There are few studies on environmental issues in the service industry (Carmona-Moreno *et al*. 2004). Stakeholder pressure is one of the key determinants of an organization's environmental management (Henriques & Sadorsky 1999). Wan (2007) found that hoteliers generally did not

value environmental management as an important tool. Low customer demand, lack of managerial knowledge, and poor enforcing of governmental regulations were barriers to implementing green ideas. In addition, lodging customers were not willing to pay extra to support environmental policies (Watkins 1994) although some hotels launched pilot schemes to encourage guests to contribute to local environmental initiatives (Green 1995). Pryce (2001) found progress on industry-wide adoption of Environmental Management Systems (EMS) to be slow with only 40% of large hotel groups surveyed in Europe having a formal EMS of which only one had been externally verified.

Despite a focus on environmental issues, some eco-resorts failed to achieve better than average standards when compared with mainstream accommodation providers. Environmental performance was related to hotel type, age, layout and size of buildings, extent of public facilities, and climate (Warnken, Bradley & Guilding, 2005). More advanced environmental strategies are associated with a higher level of environmental performance but not necessarily with economic performance (Carmona-Moreno *et al.*, 2004). Some international hotels have made positive commitments to environmentally sustainable practices. In 2001, Accor UK and Ireland Hotels committed all its UK operations to the Hospitable Climates energy saving program (Accor, 2001) and in Australia the group recently launched its Earth Guest sustainable development program (Accor, 2007). Marriott Hotel's ECHO program focuses on water and energy conservation, clean air, waste management, clean-up campaigns and wildlife preservation (Energy Vortex, 2007). Other hotels subscribe to the World Travel and Tourism Council's Green Globe 21 international certification program, which measures environmental performance in areas that include water management, waste recycling and energy efficiency (Green Globe, 2007). In the US, the EPA's Green Lights Program is a voluntary, non-regulatory program aimed at promoting energy efficiency through investment in energy-saving lighting (EPA, 2007).

Domestic power in the developed world produces about one-third of CO_2 emissions, and heating water accounts for one-third of a typical domestic power bill (Flannery, 2005). Installing solar panels to generate hot water can contribute significantly to reducing these emissions. Air conditioning in hotels accounts for half of overall energy consumption (Bohdanowicz & Martinac, 2007; Chan & Ho, 2006) and a warming climate is likely to affect energy usage and thus business profitability. Practical guidelines on saving energy and water are readily available online and through relevant government agencies. Implementation should however take place as part of holistic environmental management programs. Environmental considerations need to be integrated into normal organizational planning procedures because the ecological, social and economic costs of relying on reactive, autonomous adaptation are substantial (Smit & Wandel, 2006).

Extensive infrastructure and client expectations of luxury will mean that their carbon footprint and water usage is likely to exceed significantly that of average urban households. Often located in coastal or riverine settings, they are vulnerable to reduced availability of essential goods and services, sea level rise and episodic climatic events. Adaptation will require an understanding of projected changes and impacts on regions, economic sectors and society, consideration of options, and incorporation of risk management approaches into planning processes (Pittock, 2005).

This paper reports on progress in this study which investigates environmental management in resort hotels in Australia in response to climate change, focusing on organizational and technical activities aimed at reducing the environmental impact of a hotel's operations. The study is significant as it focuses on an important environmental challenge and directly supports the government's commitment improve energy efficiency. The research deals with the need to improve understanding of the contribution of human behaviour to environment and climate change, and gain insight into adaptive responses and strategies. It focuses on the tourism industry and promotes the integration of environmental considerations into standard management procedures. The research is innovative in that there is little known about environmental awareness in the resort hotel industry and as an adaptive generic framework, the model can be modified and applied to other industries.

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