

Climate Change Induced Economic Impacts on Tourism Destinations: The case of Australia

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Abstract

This paper examines the economic implications of the tourism sectors in the regional economies of Cairns, the Blue Mountains, the Barossa, Kakadu and the Victorian Alps in the years to come under the climate change impacts identified by the recent *Garnaut Climate Change Review*. The approach is to adopt the likely impacts of climate change on the Australian economy from the *Review* as the climate change inputs in the ambient economic condition against which the tourism impacts on those regions are measured. First of all, the regional economies as well as tourism demands for regions are projected to grow on a business as usual scenario; then the impacts of climate change on tourism demands are imposed on the regional economies to measure the climate change induced impacts of tourism on those regional economies. It is found that the climate change has adverse impacts directly on the industries in local economies, and subsequent induced effect of climate change on tourism demand will exacerbate the overall impacts of climate change on local economies. Measuring climate change impacts without taking into account the induced effect on tourism demand will under-estimate the total impacts of climate change significantly.

Keywords: Regional CGE modelling, tourism destination, tourism modelling, impact analysis

Introduction

Apart from regular television programs, the science of climate change has been documented very clearly in literature, e.g. in Hennessey et al. (2003, 2008), Garnaut (2008), and Hoegh-Guldberg and Hoegh-Guldberg (2008). Attempts have also been made to provide economic impacts of climate change on various industries of the Australian economy, e.g. wheat crops in Crimp, Howden, Power, Wang and Voil (2008), livestock in McKeon, Flood, Carter, Crimp and Howden (2008), forestry in Buchanan, Tulloh and Ford (2008), fisheries in Viera and Newton (2008), and horticulture in Duter (2008).

While the links between climate change and the output levels of industries, e.g. agriculture, can be formulated logically and scientifically at least to some extent, the link between climate change and tourism activity is harder to estimate. Often, climate change affects the environment, which leads to losses of tourist attractiveness over the longer term. But how much of these losses will translate into lost tourism activity is an unknown factor, reflecting tourists' preferences and hence the prediction of human behaviour.

The topic of climate change and tourism impacts warrants extensive research. This project should be viewed as a scoping study at this stage, which attempts to explore links between climate change and the tourism sector, and subsequently predict the magnitude of the

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