

## **Future Maker: Drawing upon information in concurrent FRST Tourism projects.**

There are two other concurrent FRST Tourism Futures projects researching topics pertinent to drivers that may affect tourism in New Zealand between the present and 2050: these are "Climate change and tourism in the New Zealand", and "Tourism and aviation: critical linkages". This briefing examines research to date in these projects for inclusion into Future Maker.

### 1. Tourism and aviation: critical linkages.

Source URL: <http://catr.otago.ac.nz/overview/>

- a. Current research examines changes in service availability and the impact on changes in visitor arrivals. Attention is drawn to the effects of the volcanic eruption in Iceland during April and May 2010. The effects of this unpredicted eruption occurred in a South Eastern band of Europe where almost all the travel was halted for many days at a time. Likewise, pandemics or threats of pandemics also impose rapid and unplanned disruptions on the travel.

In a paper recently submitted for publication the authors examined statistical linkages between factors that might affect visitor flow from Canada, Chile, Indonesia, Taiwan and South Korea. The chosen factors were real GDP, exchange-rate and time-we are real GDP and exchange rate referred to the visitor's country of origin. One of the outcomes of the correlation was the establishment of elasticities for each of these chosen factors. Future Maker is particularly interested in travel elasticity with respect to GDP per capita and purchasing power parity (PPP) in the country of origin.

The reported elasticities varied over a wide range but provide a basis for subsequent Monte Carlo analysis in Future Maker's scenarios. The following table indicates the range of elasticities (all of which are negative) for holidaymakers and other arrivals:

Elasticity Range	Holidaymakers	Other Arrivals
Upper	4.38	1.92
Average	2.91	1.124
Lower	1.22	0.1

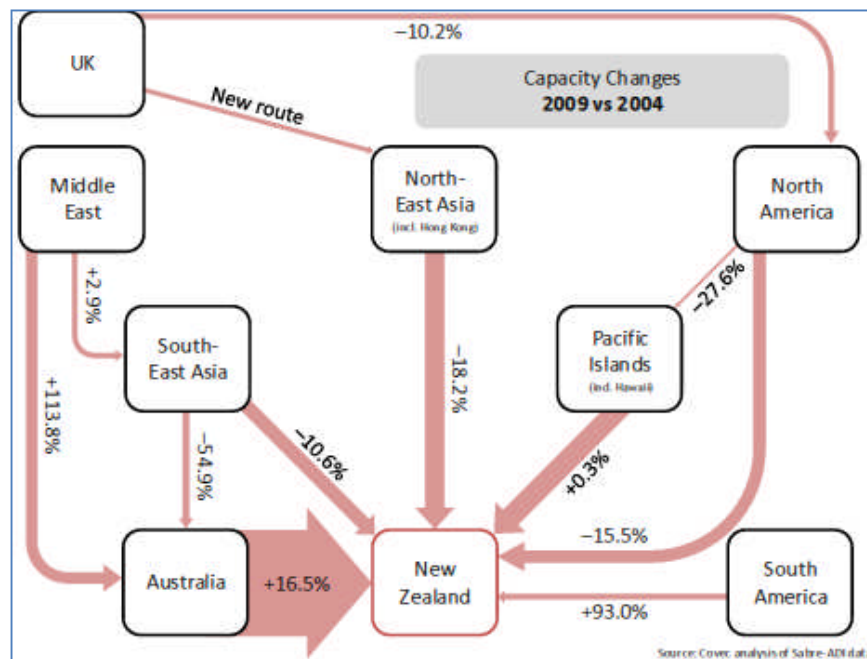
The values for Holidaymakers mirror of those gathered a number of years ago from a variety of international sources. Other Arrivals include business travellers who would be expected to be motivated by necessity rather than leisure and might have been expected to exhibit elasticities less than one. The highest elasticity for Other Arrivals related to visitors from South Korea and the second highest from Taiwan- both of which would seem to rely on New Zealanders visiting them for business purposes rather than the opposite.

b. The New Zealand Aviation Data Review.

This publication examines currently available data on geographic, temporal, service and traveller characteristics (the conceptual framework), identifies the issues and reliability is associated with currently available data within this framework and specifies an ideal set of data that could be collected by government agencies under existing legislation. In essence, insufficiently reliable data is available in many key areas of supply and demand to enable serious external analysis.

c. Capacity on New Zealand Inbound Air Routes.

This publication establishes base route capacities for 2004 and by examining the same routes in 2009 determines capacity change over the intervening five year period. It was concluded that (for same flight number inbound services) overall air capacity had shrunk by 10.2% over those five years. It was also noted that the data for 2009 was evidently more reliable than the 2004 data-suggesting that the apparent decline in capacity may be imprecise. Capacity declined by over 25% on North East and South East Asian inbound routes to New Zealand but increased by 16.5% between Australia and New Zealand. However travellers also have the option of different flight number inbound services and when this component is included in capacity improvement between 2004 and 2009 is about 6%. However it would appear that the volume of seats between Australia and New Zealand was the decisive factor in any capacity improvement.



## 2. Climate Change and Tourism in New Zealand.

Source URL: <http://www.lincoln.ac.nz/Research-Centres/LEaP/Climate-Change-Peak-Oil--Society/Projects/Climate-Change-and-Tourism/#AdaptationSouthernHemisphere>

- a. A National Level Screening Exercise to Assess Tourism's Vulnerability to Climate Change.

The following framework was adopted:

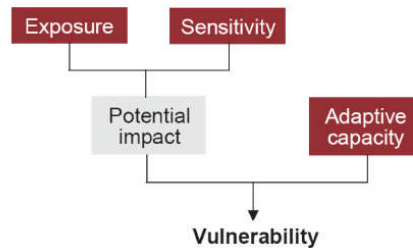


Figure 1 Diagram of exposure, sensitivity and adaptive capacity as joint determinants of vulnerability. Figure from Preston et al (2008), consistent with the definition of vulnerability employed by IPCC (2007).

Ongoing research will pursue several threads of enquiry:

- the impact of climate variability on tourism businesses,
- current adaptations to climate variability,
- time horizons and external constraints on adaptation options.

An early observation was that businesses did not engage particularly with climate change or research on climate change that time horizons to be for beyond those of normal business planning cycles. Future Maker will draw upon this observation in scenario narratives to highlight possible tipping points where business as usual might quickly change and trigger a rapid adaptation.

- b. Literature review on tourism, weather and climate.
  - i. Noted.
- c. Two case studies: Queenstown & Wanaka, Northland
  - i. Noted.
- d. Presentation: Tourism and Oil. (Presented at Victoria University management School on 14<sup>th</sup> July, 2010)

This presentation outlined the petroleum trade in NZ and also a perspective on the imminence of a peak in global oil production. Additionally, the presentation covered the implications of international tourist flows to New Zealand under the constraint of significantly higher oil prices. New Zealand's inbound visitors can be categorised as independent travellers on holiday, visiting friends and relations and tours/groups.

Of particular interest to Future Maker are views on when global oil production might peak and the elasticities of demand for inbound visitors.

The United Kingdom Energy Research Centre ([www.ukerc.ac.uk](http://www.ukerc.ac.uk)) using rate of production vs. rate of discovery comparisons, propose that c.2034 is one of the later dates for peak oil production.

Krumdieck *et al* (2010), using a Monte Carlo simulation, advance c.2020 as their perspective for peak oil production where the methodology simulates the collective views of 11 geological and production experts whose works appear to be those most cited by climate change researchers - a statistical version of a Delphi process.

Tourism elasticities of demand were also estimated for visitors arriving and for their in-country expenditure. The following table shows the ranges of these elasticities (all of which are negative):

<b><u>To NZ</u></b>	<b>FIT Holiday</b>	<b>Tour/Group</b>	<b>VFR</b>
Upper	1.75 (Korea)	1.75 (Korea)	1.75 (Korea)
Mid	1.1 (Aust)	0.75 – 1.1 (USA, China)	
Lower	0.3 – 0.5 (USA, UK)	0.35 (Aust)	
<b><u>IN NZ</u></b>	<b>All Visitors</b>		
Upper	1.75 (China FIT)		
Mid	0.5 – 1.15 (UK VFR, Japan FIT)		
Lower	0.35 (Japan Tour)		

By way of contrast with the Otago University study, these elasticities appear less extreme and somewhat less than the ranges suggested by other transportation studies. Even so, they will help to build an appropriate (e.g. Normal or Weibull) distribution of tourism demand elasticities for use in Future Maker’s Monte Carlo analysis.

### 3. Conclusion.

Useful information has been gathered from these parallel projects and will inform the scenario analysis phase of Future Maker. Elasticities will be consolidated into appropriate distributions representing the likely behaviours of key visitor classes. Estimates of peak oil dates will also inform scenario analysis narratives as Future Maker’s scenario horizon (2050) appears to be well beyond currently postulated data.

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## References

Krumdieck, S., Page, S. & Dantas, A. (2010) Urban form and long-term fuel supply decline: A method to investigate the peak oil risks to essential activities. *Transportation Research Part A: Policy and Practice*, 44, 306-322.