The Carbon-Footprint of Tourism: Measurement, Mitigation and Offset potential

Julia Bishop

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The Facts and Figures

The Stern Review: The Economics of Climate Change (2006)

- **4 million** square kilometers of land and 5% of the world's population is threatened by floods from melting glaciers.
- **4 billion** people could suffer from water shortage if temperatures rise by 2ºC.
- **35%** drop in crop yields across Africa and the Middle East is expected if temperatures rise by 3ºC.
- **200 million** people are at risk of being driven from their homes by flood or drought by 2050.
- **60 million** more Africans could be
- exposed to malaria if world temperatures rise by 2ºC.
- **200 million** more people could be
- exposed to hunger if temperatures rise by 2ºC.
- **6ºC** is a 'plausible' estimate of how much world temperatures could rise by the end of the century if greenhouse gasses are
- unchecked.
- **550 million** more people could be at risk of hunger if world temperatures rise by 3ºC.
- **40%** of the world's species would face
- extinction if temperatures rose by 2ºC.
- Stabilising greenhouse gas levels requires a cut of **25%** in global emissions, **60%** for wealthy nations.

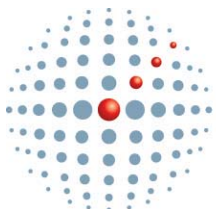
The Carbon footprint of Tourism

- Long haul flights
  -Short haul flights
  -Guest transfers – boats, cars
  -Game drives & boat trips
- The lodge / hotel /camp itself
  -Power and light
  -Cooking and waste management
  -Re-supply vehicles
  -HQ activities

Camco: Over 1000 GHG Emissions Assessments

Examples of recently completed GHG Emissions Assessments include:

- Commonwealth Heads of Government Meeting (2007)
- Deloitte's UK Operations (2007)
- National Express: Coach and train journey comparison calculator (2007)
- National Express's UK based operations including vehicle fleet (2006)
- Standard Chartered Bank: Online household carbon calculator (2007)
- Dott07 (2007): Schools carbon calculator
- Freshfields global operations (2007)
- Next's global operations (2007)
- Arriva's UK based operational emissions including vehicle fleets (2006/7)
- BSkyB's global operations (2006)
- AVIS Europe's operations (2006)
- Green Week (2005 & 2006)
- DEFRA: Greenhouse Gas Emissions Assessment for G8 Summit Meetings (2004)



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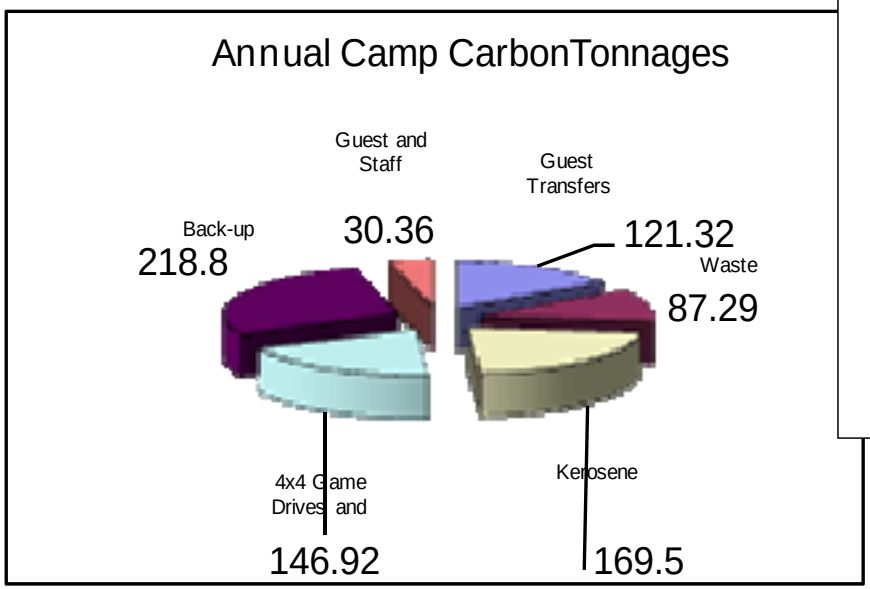
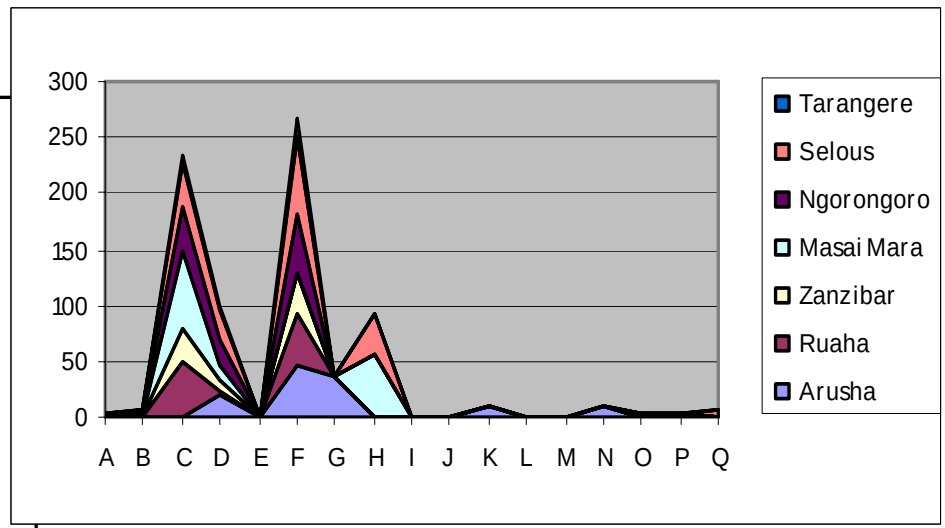
Carbon Footprint Measurement: Methodology

- Measure the Carbon
- Mitigate Emissions
- Manage the Offset





Measurement

Current best practice in GHG quantification and reporting.

- Assessments cover all six Kyoto greenhouse gases
- Encompass Scopes 1, 2 & 3 emissions sources in line with the World Business Council for Sustainable Development and World Resources Institute's (WBCSD/WRI) Greenhouse Gas Reporting Protocol best practice guidelines.
- All emissions factors used are the most up to date available from referenced sources (Defra, WBCSD/WRI, Intergovernmental Panel on Climate Change (IPCC), Energy Information Administration (EIA).

Kyoto Gas GWP

- Carbon dioxide (CO2) 1
- Methane (CH4) 21
- Nitrous oxide (N2O) 296
- Sulphur Hexafluoride (SF6) 22,200
- Perfluorocarbons (PFCs) 4800-9200
- Hydrofluorocarbons (HFCs) 12-12,000
- Note: the ‘global warming potential’ of a gas is its relative potential contribution to climate change over a 100 year period, where CO2 = 1 Source: IPCC (2001)
- The assessment covers CO2, CH4 and N2O emissions arising from fuel combustion, CH4 emissions from waste disposal, and HFC emissions from refrigerant losses from the air conditioning system.

Assessment Boundary

- Energy consumption and refrigerant losses air conditioning;
- Energy use for lighting;
- Energy use for office equipment;
- Energy used for cooking;
- Energy used for supplies to be delivered;
- Energy used for transfer of guests from the nearest airport/airstrip;
- Energy used by game drive vehicles;
- Emissions associated with waste and its disposal

Mitigation

- Housekeeping and general good practice:

  -Can reduce 25% of carbon output

  -Covers charcoal, vehicle diesel, refrigerant, water heating, waste disposal, pumps, generators, boats..
- Longer term investment

  -Can reduce up to 40% of carbon output

  -biodiesel, solar lighting and heating

  -Covers power, vehicles

Offset Potential

- Based on experience of offset calculations performed in 2008 whilst working with three safari companies in Tanzania, with a combined 12 camps and lodges, the offset potential to date, should all guests opt to pay the nominal sum (ranging between $1.10 per person and $11.80 per person per night) is $104,500pa

- The 5 main hotels in Ngorongoro could themselves raise $180,000 pa with a 50% client uptake on a carbon neutral scheme, to fund briquette manufacturing factories in the Karatu area.

- If only 50% of the total number of tourists to Tanzania participated in a carbon neutral scheme, and if each one stayed an average of 5 nights, based on average offset values experienced to date, the potential annual fund could be in the region of $7.5m.