• With its close connections to the environment and climate itself, tourism is considered to be a **highly climate-sensitive** sector.
• Climate change is **not a remote future event** for tourism, as the varied impacts are becoming evident at destinations.
• Changing climate patterns might **alter major tourism flows**.
• **Least developed countries** and **small island developing states** might be particularly affected.
• Impacts of climate change on the tourism sector are expected to steadily **intensify**.
• At the same time, the tourism sector is a **contributor** to climate change; GHG emissions from transport and accommodation.
Categories of climate change impacts that will affect tourism destinations

1. Direct climatic impacts
   • Warmer Summer
   • Warmer winters
   • Precipitation change (water supply)
   • Increased extreme events

2. Indirect environmental change impacts
   • Biodiversity loss (terrestrial and marine)
   • Sea Level Rise
   • Disease

3. Impact of mitigation policies on tourist mobility
   • Travel costs and destination choice
     (less long haul?/less plane?)

4. Indirect societal change impacts
   • Global/regional economic impacts
   • Increase security risks (social/governance disruption)
Tourism Vulnerability ‘Hotspots’

- **WS** = warmer summers
- **WW** = warmer winters
- **EE** = increase in extreme events
- **LB** = land biodiversity loss
- **MB** = marine biodiversity loss
- **W** = water scarcity
- **SLR** = sea level rise
- **D** = increase in disease outbreaks
- **PD** = political destabilization
- **TCI** = travel cost increase from mitigation policy
Climate Change Impacts at Tourism Destinations
Relative Adaptive Capacity of Major Tourism Sub-Sectors

- **High Adaptive Capacity**
  - Tourists
  - Tour operators, transport providers (railways, airlines), travel agents

- **Low Adaptive Capacity**
  - Hotels/resorts, Attraction operators, communities

Flexibility in travel decisions: Mobile Actives → Fix Actives
The process of adaptation needs to start now

- Information requirements for successful adaptation will increase substantially over the next 25 years
- Infrastructure and market transitions will take decades in some cases
### Global Tourism Emissions in 2005: CO₂ Only

<table>
<thead>
<tr>
<th>Sub-Sectors</th>
<th>CO₂ (Mt)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air transport *</td>
<td>515</td>
<td>40%</td>
</tr>
<tr>
<td>Car transport</td>
<td>420</td>
<td>32%</td>
</tr>
<tr>
<td>Other transport</td>
<td>45</td>
<td>3%</td>
</tr>
<tr>
<td>Accommodation</td>
<td>274</td>
<td>21%</td>
</tr>
<tr>
<td>Activities</td>
<td>48</td>
<td>4%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,307</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total World</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(IPCC 2007)</td>
<td>26,400</td>
<td></td>
</tr>
<tr>
<td><strong>Tourism Contribution</strong></td>
<td></td>
<td>5%</td>
</tr>
</tbody>
</table>

* - does not include non-CO2 emissions and impact on climate

Transportation of Tourists = 75% of Sector Emissions
Mitigation options

- **Reducing energy use / Conservation:**
  - changing transport behaviour (e.g. shift to rail and coach instead of car and aircraft, choosing closer destinations), changing management practices (e.g. videoconferencing for business tourism)

- **Improving energy efficiency:**
  - use technology to carrying out the same operation with a lower energy input

- **Use of renewable or carbon-neutral energy:**
  - substitute fossil fuels with energy sources that are not finite and cause lower emissions, such as biomass, hydro, wind, and solar energy

- **Sequestering CO₂ through carbon sinks:**
  - CO₂ can be stored in biomass (e.g. through afforestation), in aquifers and in geological sinks (e.g. depleted gas fields)