

# ECONOMIC IMPACTS OF CLIMATE CHANGE AND ADAPTATION MEASURES ON TOURISM IN SWITZERLAND



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What will be the costs and benefits related to climate change for the Swiss tourism sector and what are the possible private and public adaptation measures on regional and national scale?

## 1. INTRODUCTION

Tourism is an important economic sector and by nature directly linked to weather and climate. It is therefore comprehensible that it is considered one of the most vulnerable sectors to climate change in Switzerland [Ecoplan - Sigmoplan, 2007].

## 2. OBJECTIVES

In the context of this thesis, we will attempt to achieve more comprehensive estimates of future costs and benefits of climate change for the tourism sector. We will in particular:

- determine changes in demand and supply for domestic and international tourism ;
- provide an economic valuation of the most relevant climate change impacts for this sector ;
- identify possible private and public adaptation measures on regional and national scale for tourism ;
- provide an economic valuation of the retained adaptation measures ;
- identify what is needed to overcome the barriers to bring adaptation issues to the front of political discussions.

## 3. SCENARIOS

We will consider a 50 year time horizon (2000-2050) under various socio-economic scenarios (IPCC SRES A1B, A1T, B1 scenarios). We therefore take into account demographic, economic and technological changes.



## 4. METHOD

We take as a starting point our previous survey of estimates of physical impacts of climate change [Matasci, 2008] in order to extend our previous work on adaptation measures [Gonseth, 2008] and refine existing estimates of impact costs for the Swiss economy [Ecoplan - Sigmoplan, 2007].

We will determine the change in supply and demand for the tourism sector in two steps (Figure 1) :

1. assess the changes in international and domestic tourism flows (as a part of the changes in demand) using the Hamburg Tourism Model (HTM);
2. create a climate change vulnerability index. We will assess changes in supply and demand by evaluating how direct and indirect physical impacts (average changes of climate and weather, natural hazards, etc) will influence tourists' choice and affect infrastructure on Swiss territory. We will use a Geographic Information System (GIS) for this calculation.

In our study, we will not restrict our attention to winter tourism, but we will also consider summer and shoulder peak tourism. Sectors considered are the catering industry, accommodation, passenger transport, travel agencies - tour operators and the sport and entertainment sectors.

## 5. VULNERABILITY AND ADAPTATION ASSESSMENT PROCESS

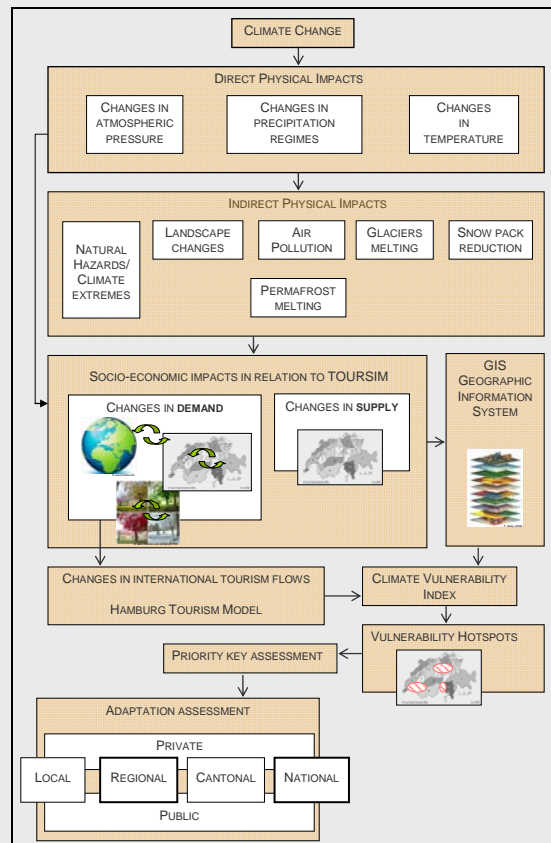


Figure 1: illustration of the method used to assess the impacts of climate change on tourism, vulnerability hotspots and possible adaptation measures

## Acknowledgements and Status of Research

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 Juan Carlos Altamirano Cabrera (EPFL-REME)  
 Status: work in progress

## REFERENCES

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