NATURE-BASED TOURISM, OUTDOOR RECREATION AND ADAPTATION TO CLIMATE CHANGE

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About this presentation

- Background
  - FinAdapt Research Program
  - Report Nature-based tourism, outdoor recreation and adaption to climate change (Sievänen et al. 2005)

- Sub-study of nature based tourism;
  - Researchers: Arvo Peltonen, Jarkko Saarinen, Kaarina Tervo

- Sub-study of outdoor recreation
  - Researchers: Marjo Neuvonen, Eija Pouta, Tuija Sievänen

- Conclusions and discussion
Background

- Almost all (97%) of Finns recreate outdoors during the year
- Participation rates, examples
  - 46% in skiing activities
  - 47% in boating
  - 46% in fishing
- 40% make a nature trip during a year
  - 9 trips per year (2 median)
  - 25 days (9 median)
  - 5 days in average
  - distance to destination 300 km
Background

- 4.9 million foreign travellers, of which about ¼ participate in outdoor activities (2004)
- Nature-based tourism is about one fourth part of the tourism in total
  - WINTER TOURISM IS GROWING FAST
- Employment about 20,000-30,000 man-years in nature-based tourism (2002)
  - in Finland, about 1 percent of labour force
  - in Lapland, 7% of labour force
Sub-study 1: NATURE-BASED TOURISM AND GLOBAL CLIMATE CHANGE
Objectives and Data

- (1) the status of nature-based tourism entrepreneurs’ knowledge about climate change and its effects on the enterprise’s operations,
- (2) where the knowledge originates, and
- (3) what kind of adaptation strategies entrepreneurs have

Total 19 interviews were conducted to tourism entrepreneurs in Northern Finland (n=9) and the Finnish Lake District (n=10)
Belief in climate change according to location and type of operation of the enterprise

- **Region**
  - Northern Finland (n=9)
  - Lake District (n=10)

- **Type of operation in Northern Finland**
  - Program service
  - Skiing centre

The diagrams show the percentage of respondents who believe in climate change, with categories for 'yes', 'no', and 'no opinion'.
Impacts of predicted climate change as stated by tourism entrepreneurs

- shorter winters
- longer summers
- environmental changes
- more tourists to the north
- milder winters
- more snow
- more rain
- more variability, extreme weather events
- longer spring and autumn
- worse summers
- longer winters
Entrepreneurs’ assumptions about the impact of climate change on the tourism industry

![Bar chart showing the distribution of positive, negative, and no impact assumptions about climate change in Northern Finland (n=9) and Lake District (n=10). Positive assumptions are in blue, negative in green, and no impact in tan.]
Experiences of climatic variation affecting tourism operations

- More experiences in the North
Adaptation plans

- More plans in the North
Adaptation methods in use to cope with climatic variability in Northern Finland

- snowmaking facilities
- careful marketing
- substitute activities
- product development
- relocation of operations
- increasing capacity
- emphasizing summer activities
Concluding remarks of sub-study 1

- Climate change is a minor threat for the nature-based tourism industry for next twenty years

- Disbelief in climate change and its impacts reduced the number and forms of adaptation plans

- No exact knowledge on possible impacts → no efforts in adaptation strategies (worthless and waste of resources)

- Belief: Capacity to adapting even at a short notice
Sub-study 2: OUTDOOR RECREATION AND GLOBAL CLIMATE CHANGE
Objectives of the study

- to present scenarios of autonomous adaptation in outdoor recreation behaviour
- to discuss needs and options of adaptation
  - Recreationists
  - Recreation service provision of public sector
Method

- LVVI data – 15-74 years old Finnish population
- Connected to weather data – survey responses

Models
- binary logistic regression
- left truncated negative binomial regression model
Studying present behaviour, exploring explaining factors:
- socio-economic background
- climate
- unknown?

Process

Assumption: no change in behavior

outdoor recreation participation

selecting climate sensitive activities
- skiing
- snowmobiling
- swimming

applying scenario information in models
- CLIMATE A2 & B1
  AGE, EDUCATION, URBANIZATION...

participation scenarios,
CALIBRATED WITH DEMOGRAPHIC CHANGE
Demographic scenario

- Population 65+ years
- Population 35-64 years
- Population 0-34 years
- Total Finnish population
Scenarios of cross-country skiing

Cross-country skiing

<table>
<thead>
<tr>
<th>Participants, million/year</th>
<th>Climate (A2)</th>
<th>Socio-economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>1.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Near term</td>
<td>1.4</td>
<td>1.3</td>
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<tr>
<td>Mid-term</td>
<td>1.3</td>
<td>1.2</td>
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<tr>
<td>Long term</td>
<td>1.2</td>
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</table>

[Graph showing participation trends over time for cross-country skiing in different scenarios.]
Downhill skiing

Participation days, million/year

Present near term mid-term long term

Participants, million/year

Participants climate change (A2) & socio economic
Participants climate change (A2, B1)

Days climate change & socio economic
days climate change (A2, B1)
Scenarios of Snowmobiling

Snowmobiling

Participants, million/year

participants climate change (A2) & socio-economic
days climate change (A2)
days socio-economic

Participation days, million/year

present near term mid-term long term
Swimming in natural waters

![Swimming in natural waters](image)

**Swimming**

- **Participants, million/year**
  - Red line: participants socio-economic
  - Green line: participants climate change (A2)

- **Participation days, million/year**
  - Red line: days socio-economic
  - Gray line: days climate change (A2) & socio-economic

Time periods:
- Present
- Near term
- Mid-term
- Long term
Concluding remarks of sub-study 2

- adaptation in recreation participation:
  - strongest decline in skiing and snowmobiling
  - increase in swimming
- to adapt to climate change
  - skiers: 1) shift to other activities, 2) travel longer distance to ski, 3) use new types of skies
  - snowmobilers: shift to other activities
Concluding remarks of sub-study 2

- recreation service providers:
  - trails on artificial snow
  - other options for services for alternative activities
Conclusions and discussion

- Ski tourism enterprises may get new clients at first, but on long run the industry may lose clients as the number of skiers in the population decline.
- The time perspective of climate change is too long for tourism entrepreneurs.
- Information of climate change needs to be regionally more specific.
Future research needs

- Monitoring recreation and travel behaviour
- Awareness of climate change by tourists and recreationists, their perceptions of the future conditions and options of adaptation (contingent behaviour studies)
- Regional differences; the possible transition of tourists and tourism industry to new regions
- Economic, social and cultural impacts
- Evaluation of potential adaptation mechanisms and strategies, and their economic, social and cultural impacts
- Different time perspectives of adaptation in private and public sector
Which one is our future?

THANK YOU !