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BLUE ACTION KICK-OFF MEETING

CLIMATE EFFECTS ON WINTER TOURISM IN FINNISH LAPLAND: **RUKAKESKUS**



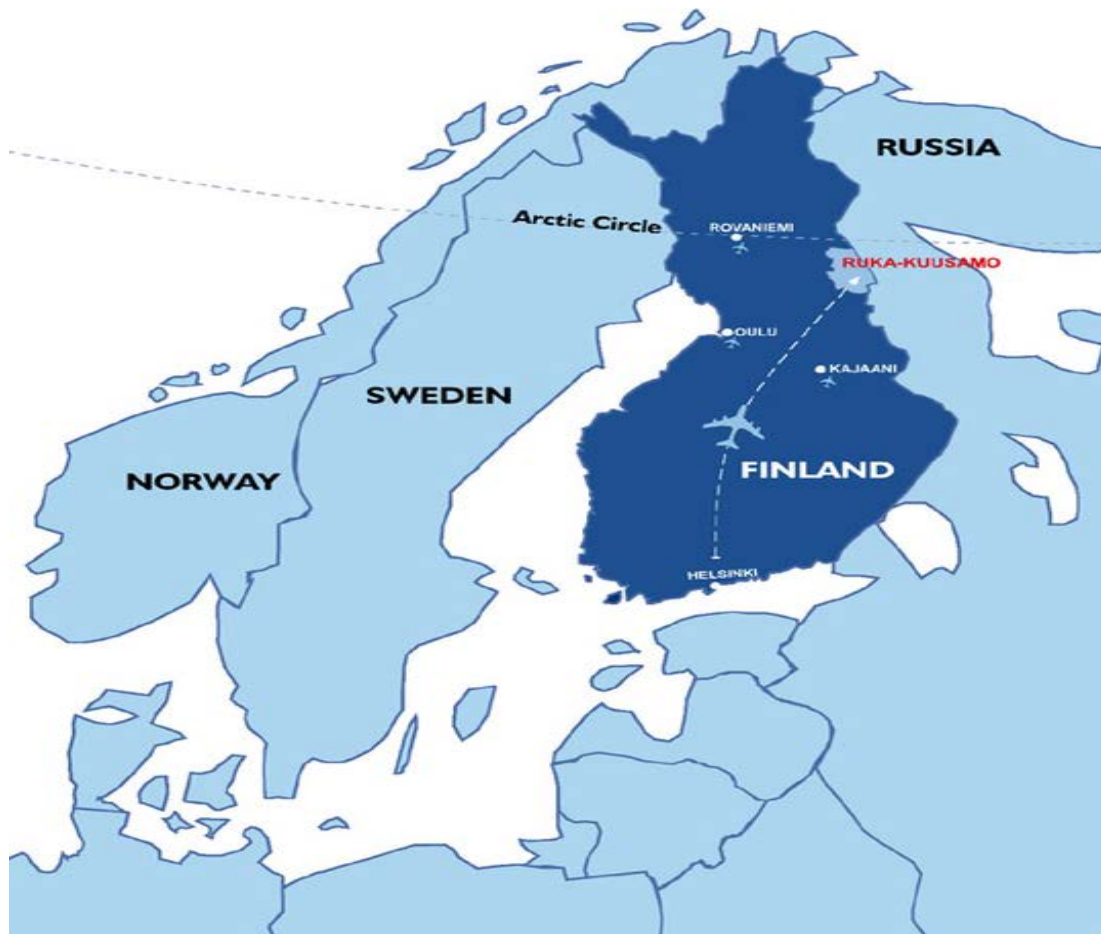
ARCTIC CENTRE
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LOCATION MAP

Rukakeskus is in northern Finland, slightly below the Arctic Circle.



CLIMATE CHANGE AND WINTER TOURISM IN LAPLAND

Climate change may be **positive** for Northern Finland

- Gain **competitive advantage** due to the potential problems of lack of snowfall in southern Finland and central Europe (the Alps).

Climate change may also be **negative**

- **Northern Fennoscandia** is one of the **fastest warming regions** in Europe.
- Finland has shown one of the fastest warming rates over the last half century, with the **highest increases in temperature in November, December and January.**
- **Nature-based tourism** provides more employment opportunities than any other regional industry, yet is extremely vulnerable to climate change.

RUKAKESKUS

Located in Kuusamo area – climate is more continental than other parts of Finland, mean temperature is 0 degrees Celsius.



RUKAKESKUS PROFILE

- Owned by the Aho family, awarded **Finland's Best Ski Resort** in the World Ski Awards 2014.
- Market leader in ski resort industry - nearly 20% share of ski pass sales, turnover of approx. EUR 26 million annually, **380,000 visitors** and employs about 170 people.
- 34 slopes, 21 ski lifts and chairlifts, lift **capacity of 25,400 skiers** per hour
- Summit height = 492 m, longest slope = 1300 m
- **200 ski days** per year

Forerunner in environmental programs:

- Green energy (hydropower and biomass)
- Carbon neutral

RUKAKESKUS = SNOW SECURITY

First ski resort to open each year in Lapland for **all customers**, not just for the racing teams (although Ruka would like to get the racing teams to Ruka that practice in the Alps).

Goal is to always be the first open and to ensure the season's longevity (October to April for tourists ending in June for racers).

The most **snow secure ski resort** in Finland. **Ruka uses only man made snow** for the slopes and all over the resort. Amount of snow for activities varies, e.g. cross country trails = a few inches of snow versus **downhill slopes = about half a meter**.

PREDICTING, PREPARING & ADAPTING TO CLIMATE CHANGE

RUKA SKI AREA

Northern Finland is one of the fastest warming regions in Europe.

Proper winter conditions are key to commercial success: information on future climate and specific local weather conditions is needed to prepare and adapt to future change.



GENERAL INFORMATION NEEDS

Winter: Both short (daily/monthly/seasonal) and long term (5 year intervals) are interesting, but **especially long term**. If exact data is not available, even patterns and estimates can help.

Temperature, wind, humidity, cloudiness, snow fall amounts, changes in winter season length and when winter starts/ends.

Summer: Temperature, rainfall, sunshine, humidity, how the changes in weather/climate affect nature in general.

Scale: Ideally a **'micro-forecast'**, i.e. focusing on the ski resort and immediate area.

Global trends: **El Nino/La Nina** and how they affect the weather and climate conditions in their area.

INFORMATION NEEDS, cont.

Predictability – affects snow making in January, i.e. may make more snow the previous January for the next season..

- Cost of snow making in January vs October: **1 euro versus roughly 30 euros per cubic meter.**
- Snow storage during summer - Innovative insulation system: **mounds covered with white gauze and sawdust.** Typically **50 percent loss** yet still cheaper than to make snow in marginal conditions in October.

Prediction of other weather-related events, such as an **El Nino or La Nina** very helpful. Want to understand what effect global phenomena have had on their ski resort based on historical data.

Temperature: second most important piece of information to have. Snow making in January because **cold, dry and not windy**... snow easier to spread on the slopes.

FORECAST DATA IS ESSENTIAL

October-December season warming fast. Forecast data needed to plan snow making and snow storage. Even if 'micro-forecast' available, would take years for Ruka to trust the data. Any business risks taken would be quite small, i.e. may make 30 percent more snow in January one year. Weather and climate information required to assess the competitive position of Northern Finland relative to other major European ski centres.



Thank you!

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