



Climate Change and the Development of Winter Tourism In Central Asia: the Case of Kyrgyzstan

By Bernard MUSYCK
with the collaboration of Rustam Pallaev &
Milena Melnikova (UCA students)

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Methodology

The study is based on the collection of primary and secondary data

- Semi-structured face-to-face interviews with (almost) all ski resort operators in Kyrgyzstan (ongoing)
- Fact-finding visits (on-site) to all ski resorts in Kyrgyzstan
- Analysis of a range of secondary sources - existing studies and publications on winter tourism in Kyrgyzstan
- Review of international literature on the effect of climate change on the ski industry worldwide





LITERATURE ON CLIMATE CHANGE AND SKI TOURISM 1/4

- Ski tourism is big business in the West
- Huge investments to satisfy customers' expectations
- Mature market with stable or declining demand (aging population) - except in China and other emerging markets
- Rich literature on interaction of climate change with ski tourism (starting in the 1980s in the US & Europe)

Steiger *et al* (2019)

LITERATURE ON CLIMATE CHANGE AND SKI TOURISM 2/4

Existing research focuses on rich countries: US & Canada, Australia, Europe, Japan

No publications on post-Soviet countries and Central Asia: we hope to fill the gap!

Climate sensitivity:

- low altitude ski areas are most impacted by snow depth and temperature
- drop in ski lift tickets demand linked to snow cover
- lack of snow in urban areas depresses demand
- early snowfall - positive impact for the season
- smaller resorts lose out to higher located better capitalized resorts



LITERATURE ON CLIMATE CHANGE AND SKI TOURISM 3/4

Impact and vulnerability assessments

- projected reduction in the length of ski season following different temperature scenario
- first without snow making facilities - later (>2000s) with artificial snow
- “Optimal Ski Days” measurement: snow, temperature, sunshine, wind...
- snow can vary a lot in time and space - climate models cannot reflect this



LITERATURE ON CLIMATE CHANGE AND SKI TOURISM 4/4

Skiers' perceptions and their responses

Skiers can adapt fast and easily:

- they can change the time and destination of their trip
- they can swap activities away from downhill skiing
- ====> brings winners and losers resorts, increased crowding at peaks

Stakeholders' perception of risks

Current risks: variability of arrival of first snow / reduced capacity to produce snow
Distant risks: climate change is incremental and distant / skepticism
Belief that improvements in snowmaking technology will negate the effects of climate change

Limits of the ski business depend on integrated parameters: water, energy use and pricing



ADAPTATION STRATEGIES 1/2

Snowmaking: high installation costs, energy & water \Rightarrow environmental costs

Slope development: smoothing & grooming, shading, north facing, higher elevation developments

Consolidation (ski business conglomerates): effective model provides greater access to capital and marketing, protection against regional variability

Revenue diversification: increased offerings to non-skiers - all year-round operations

Marketing: insurance "deals" with guaranteed ski days

Climate forecast: needed for better strategic decisions - when to open - when to produce snow

Government: supporting policies related to land, water and energy

ADAPTATIONS STRATEGIES 2/2

Adaptation options are context-specific:

- Depends on geography: micro-climate, elevation, access to urban market
- Governance: access to land and water
- Business model: size and type of operation

Greater adaptive capacity comes from:

- + Higher elevation with greater potential for snowmaking
- + Access to capital for efficient snowmaking
- + Potential for increased water supply
- + Capacity for diversification (non-ski operations)
- + Membership of a larger financially strong entity
- + Supportive governance and positive relation with local communities

(Scott & McBoyle 2007)



KYRGYZSTAN SKI RESORTS



AIRPORT CONSTRUCTION
IN KARAKOL

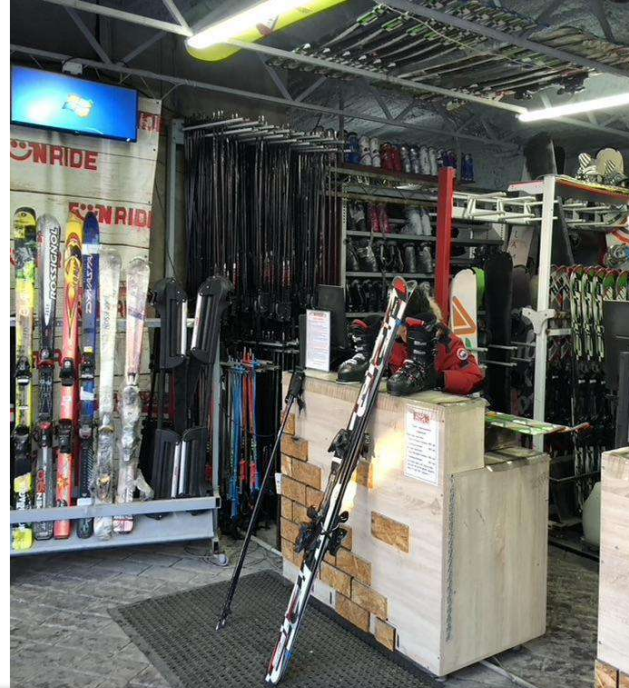




RESORTS CLOSE TO THE CAPITAL



ТЕЛ.: 0 704 77 27 27; 0 990 88 28 28 ТРАН



USED SKI LIFTS FROM EUROPE



PROBLEMS FACED BY KYRGYZ RESORTS

*KOMISSAROV (ED) 2016 PRACTICE,
PROBLEMS, PERSPECTIVE OF WINTER
TOURISM*

1. Safety: absence of regulatory framework for the operation of ski resorts
2. Poor infrastructure
 - outdated dangerous equipment (used)
 - poor access roads - not cleaned after snowfall
 - frequent power outages
3. Problematic relations with local communities - issues are politicized - used by criminals - incentives needed for locals
4. Short season
5. Lack of access to finance
6. Government issues related to land use and taxation
7. No professionalism – shortage of qualified instructors
8. Corruption...

What is missing?





Bad Road Access



SELF-MADE LIFTS



ISSUES RAISED BY SKI RESORT OPERATORS

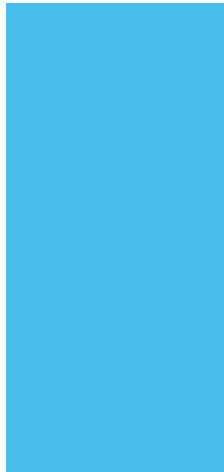
- Small ski resorts around the capital Bishkek suffer from uncontrollable affluence (saturation of all services) during weekends and empty slopes during weekdays
⇒ impact on safety & operation costs
- For all ski resorts - access road is a major issue - severely limits operations
- Institutional uncertainty and legal barriers to growth:
 - How can I invest if I cannot secure the land?
 - Contracting credit is dangerous - it makes you vulnerable to corrupted and criminal actions from large business interests
- Investment threshold is too big: too many things need upgrading - need for integrated approach, otherwise pointless exercise
- Climate change is identified as an issue - but not a major one - anecdotal evidence only – low awareness
 - variability of snowfall
 - rain out of normal season
 - strong winds
 - short(er) season

Conclusions: Is climate change a problem for the rich?

- The ski business in Kyrgyzstan is supported by a growing urban middle class - demand is rising
- Unlike in the rich West, barriers to growth or not linked to climate change
- Still, if and when basic issues can be solved, snow making may still be out of financial reach

It would seem that Dizin cannot guarantee its previously long season... at the same time, not all problems can be attributed to climate change along and other factors have contributed to putting Dizin in a competitive disadvantage. For example, the absence of profits means that funds are not available for essential spending on repairs and the upgrading of infrastructure and amenities, which is also necessary for the sustainability of the snow ski tourism industry... Artificial snowmaking is not a realistic option because of the expenses incurred... there is already a shortage of water and electricity which are essential for snowmaking, and the price of the latter in Iran has increased in the past few years. Government interest in solving problems of snow ski resorts in an era of global warming is also limited in Iran... budgetary weakness have frustrated the progress... the absence of effective planning and formal support ... has frustrated the capacity of ski resorts in Iran to adapt. Skiers in Iran are likely to be discouraged by poor communication, including the regular closure of access roads to the pistes and the deteriorating quality of facilities... The lack of official statistics on ski tourists and the long-term climate patterns makes it difficult to properly assess the changes in climate and their impacts on the ski tourism industry.

Qhaderi, Khoshkam, & Henderson, (2013). *From snow skiing to grass skiing: Implications of climate change for the ski industry in Dizin, Iran, Anatolia - An International Journal of Tourism and Hospitality Research*



AGENDA FOR FUTURE RESEARCH

There are no statistics on climate change and its impact on the ski business in Kyrgyzstan

Integrated approach that combines climatological analysis with socio-economic assessment

Use of climate models, satellite imagery and meteorological observation at the regional level to assess each resorts' snow history and potential limits for growth

Interpreting weather data and assessing adaptive capacities of specific categories of ski resorts in Kyrgyzstan



THANK YOU

bernard.musyck@ucentralasia.org





