

Environmental Challenges

(to Sustainable Development & Human Well-being in the Arctic):
Needs for Research

11th CPAR, Whitehorse, 10 September 2014

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“Environmental” + “Challenges”

challenge   [see definition of challenge](#)   

noun **dispute, question** *verb* **dispute, question**

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Relevance  A-Z Complexity  + Length  +

Synonyms for challenge Common

noun **dispute, question**

objection	claiming	demanding	remonstrance
protest	confrontation	demur	trial
test	dare	interrogation	ultimatum
threat	defiance	provocation	summons to contest

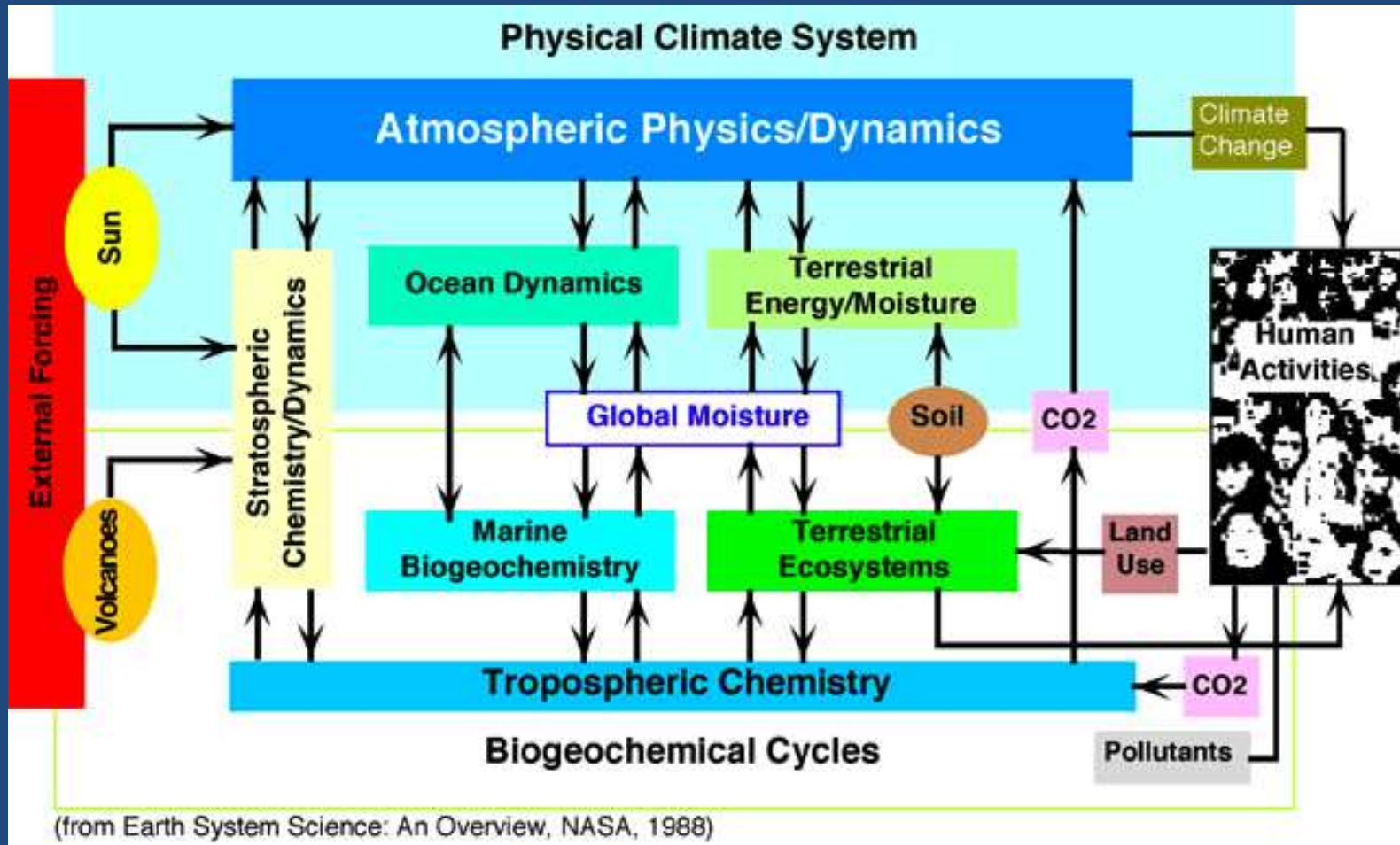


Challenge  change??

“Environmental” + “Challenges”

- ‘Environmental challenges’ are overwhelmingly anthropogenic in origin
 - “Anthropocene”
- ‘Global environmental change’ = ‘human and social problem *par excellence*’ (ISSC 2010)
- Environment - no longer a ‘natural’ domain
Environment/society nature/culture

Outdated view



Arctic Environmental Challenges (common understanding)

- Melting permafrost
 - Thermokarst erosion
 - Methane release
- Declining sea ice
 - Increased access -> vulnerability
- Changing species composition
 - Invasive species (pests, pathogens, epizoonotics)
- Changing habitat diversity
 - Habitat fragmentation
- Changing precipitation regimes
 - Drought, increased forest fires,
- Increased resource extraction
 - Landscape degradation
- Linear features (pipelines, roads)
 - disrupting migration routes
- Etc. etc. etc.



Arctic Environmental Challenges: Social Sciences & Humanities Issues

- Northerners “facing an unprecedented combination of rapid and stressful changes involving both environmental forces like climate change and socioeconomic pressures associated with globalization” (AHDR 2004).
- Interactions between changing ‘natural’ environment and evolving social, economic, political and cultural environments are complex
 - and we certainly don’t yet fully understand these interactions or trajectories.

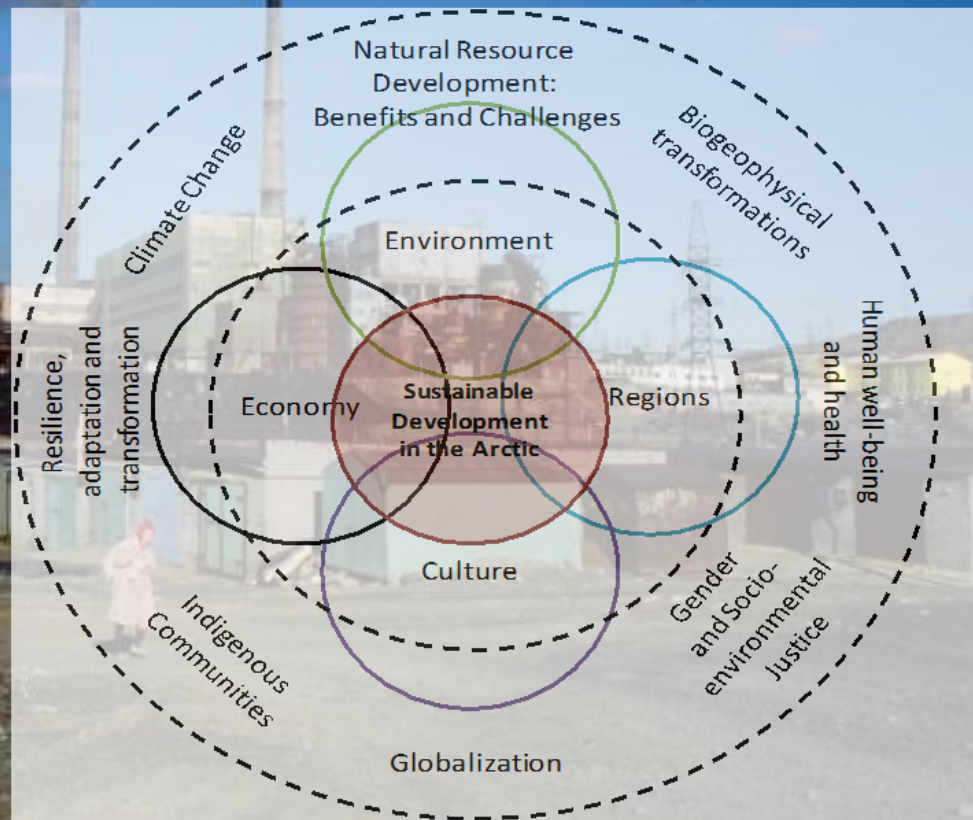


10th CPAR Statement, 2012: #32: “Analyze the knowledge gaps in Arctic social sciences and research...”

Living with “Environmental” Challenges in the North: one example



Environmental Challenge: What exactly is Arctic **sustainability**? And how is it achieved?



Environmental Challenge: How do we measure **human development** in the Arctic?

- In the face of an ‘unprecedented combination of rapid and stressful changes’ need to **track and monitor human development** (AHDR 2004)
- Arctic Social Indicators project
 - a first step
- AHDR-II (2014)
 - Forthcoming shortly



9th CPAR Statement, 2010: #9: “Secure long term monitoring of development in the Arctic” (2010)

Environmental Challenge:

What are best practices in **resource governance**?

- Identify Innovative (formal and informal) institutions that are adaptive to conditions of changing environment
- Understand capacity of informal institutions to complement formal institutions in ways that ensure responsiveness in resource management in face of changing environment
- What obstacles exist to adaptive resource governance and how can these be removed?
 - E.g. Unresolved land rights/ unsettled land claims

10th CPAR Statement, 2012: #11: "Produce good examples of ... governance that other parts of the world can replicate and learn from."



Environmental Challenge: What are the (evolving) **gender** dimensions of environmental change?

- How are constructions of masculinity shaping men's career and mobility choices?
- What role does sense of security play in women's mobility choices?
- What input do women provide to the Corporate Social Responsibility discourse in the Arctic?



10th CPAR Statement, 2012:#16: "Ensure that gender based analysis is used in the development, implementation and assessment of all Arctic policies."

Environmental Challenges: How do we **build capacity** to ‘use a full toolkit’?

- Natural, physical & social sciences and humanities
- & Traditional and local knowledge
- ‘multi-disciplinary’ ‘trans-disciplinary’ ‘cross cutting’

Permafrost Dynamics and Indigenous Land Use Workshop

Helsinki (Finland), 6-7 April 2014

The idea for this workshop on „Permafrost Dynamics and Indigenous Land Use“ was owed to a conspicuous gap between different disciplines’ research agendas: there is substantial expertise on permafrost (and related hydrological and soil processes) on the one hand, and on indigenous forms of land use that utilize thermokarst, on the other hand; but the two have thus far rarely been

integrated. The workshop, organized as a fringe event of the Arctic Science Summit Week 2014 Helsinki, attracted remarkably strong attention and interest among the Arctic research community as it was felt that a new level of integration was being achieved.



On the example of thermokarst regions in the central Yakutian lowlands, social and natural scientists explored the preconditions and dynamics of indigenous resource use - notably cattle breeding - in a permafrost landscape. The indigenous Sakha population has actively put use the diversity of ecological conditions in this highly dynamic setting. Over a period of 800 years they have developed a livelihood based on thermokarst grass lands in an otherwise dense



10th CPAR Statement, 2012: #37: “Continue the inclusion and recognition of traditional and local knowledge and improve the interplay and complementary relationship between traditional knowledge and conventional science.”



Moving Forward

- Environmental challenges in the Arctic experienced differently across the Arctic
 - By place
 - By populations
- Vulnerabilities to environmental challenges vary across space
 - As do potential adaptations



Moving Forward



- Social sciences sometimes seen as value laden, contextual – and therefore ‘unreliable’ (ISSC 2013)
- Yet attention to context is critical to addressing “environmental challenges” & identifying mitigations and/or adaptation strategies

Moving Forward

- Arctic Human Development Report II
- Key Recommendations from AHDR-II to AC's Sustainable Development Working Group
 - (via Social, Economic and Cultural Expert Group)
- International Conference of Arctic Research Planning III (April 2015)
- International Polar Partnerships Initiative (IPPI)



A scenic landscape featuring a rocky shore in the foreground with a white sled. The middle ground is filled with a sea of icebergs floating in the water. In the background, there are snow-capped mountains under a clear sky.

Thank You!