

Arctic Climate Impact Assessment



Mandated by the
Arctic Council

Implemented by the
AMAP, CAFF, and IASC

ACIA

Progress, Status, and



Recent Insights



The Goal of ACIA:

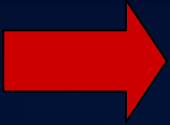
- Conduct a scientific assessment within the expanded context of other developments and pressures on the Arctic environment, it's economy, regional resources and peoples.





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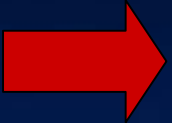
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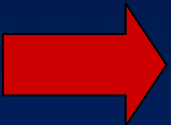
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- Provide useful and reliable information to the governments, organizations and peoples of the Arctic region in order to support policy-making processes.

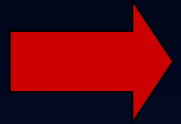




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- Evaluate and synthesize knowledge on climate variability, climate change, and increased UV radiation and their consequences/potential impacts.
- Provide useful and reliable information to the governments, organizations and peoples of the Arctic region in order to support policy-making processes.
- Recommend actions based on an examination of the environmental, human health, social and economic impacts.



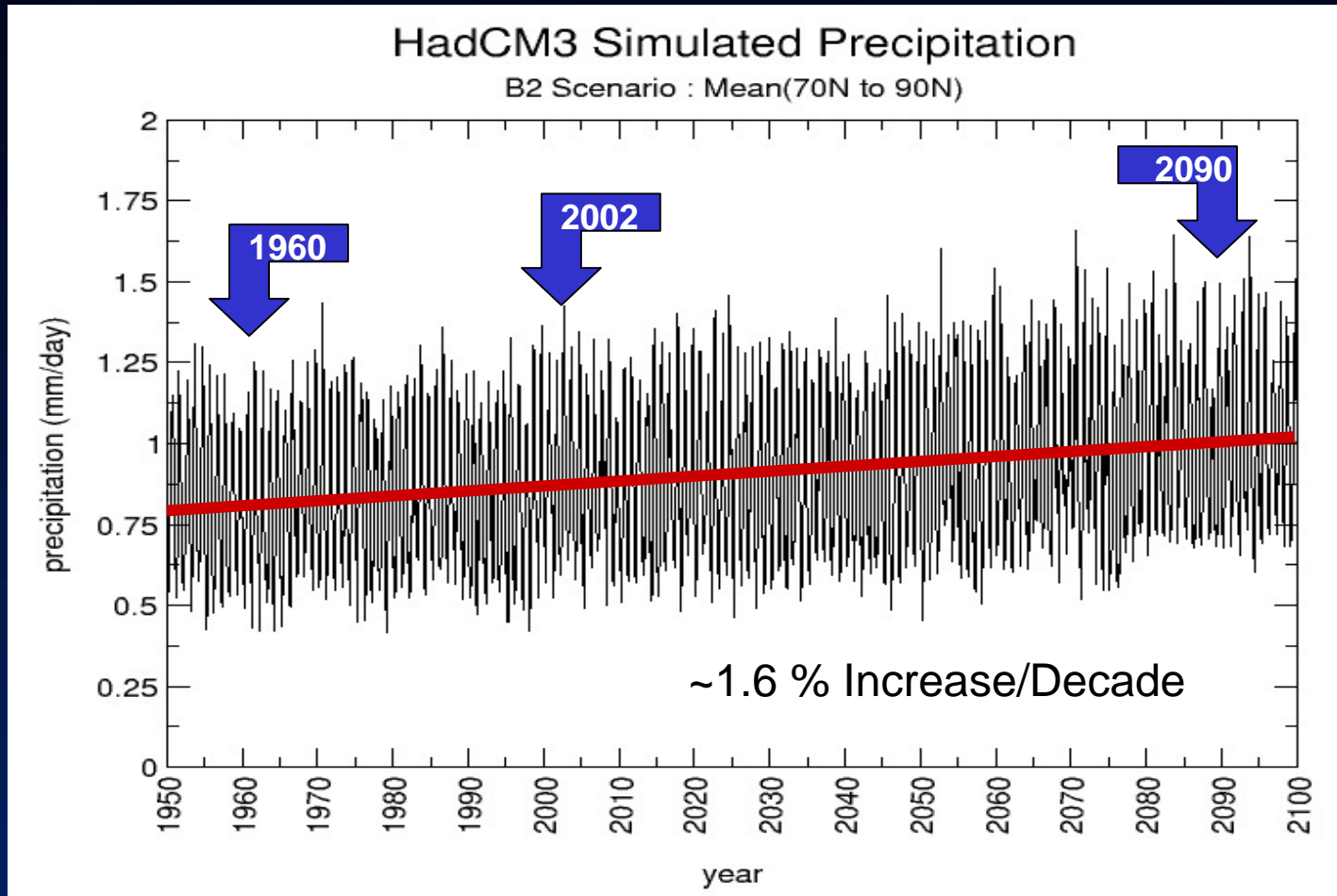


What Changes in Climate and UV Radiation of Importance to the People, Environment, and Nations of the Arctic are being Documented by the ACIA ?



Observed Changes in the Arctic:

- Increases in precipitation





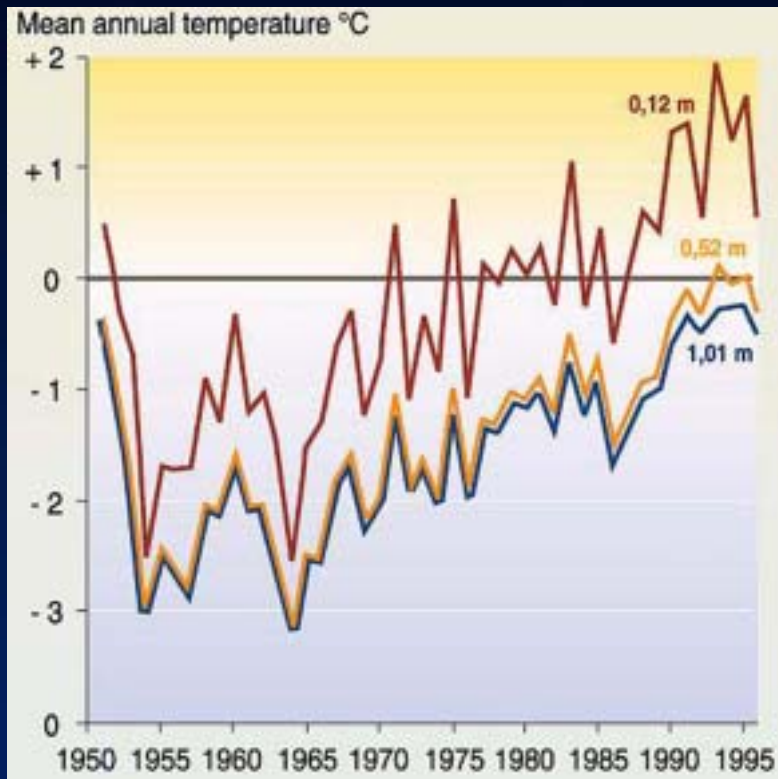
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Observed Changes in the Arctic:

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- Variations in the ranges of animals and ecosystems



Variations in the ranges of animals and ecosystems

- Reindeer herders in Norway have reported marked variations in the geographic ranges of moose, deer and other animals.

- From studies in Canada, it is clear that climate change is likely to affect caribou body condition, herd movements and distribution, and abundance of caribou.





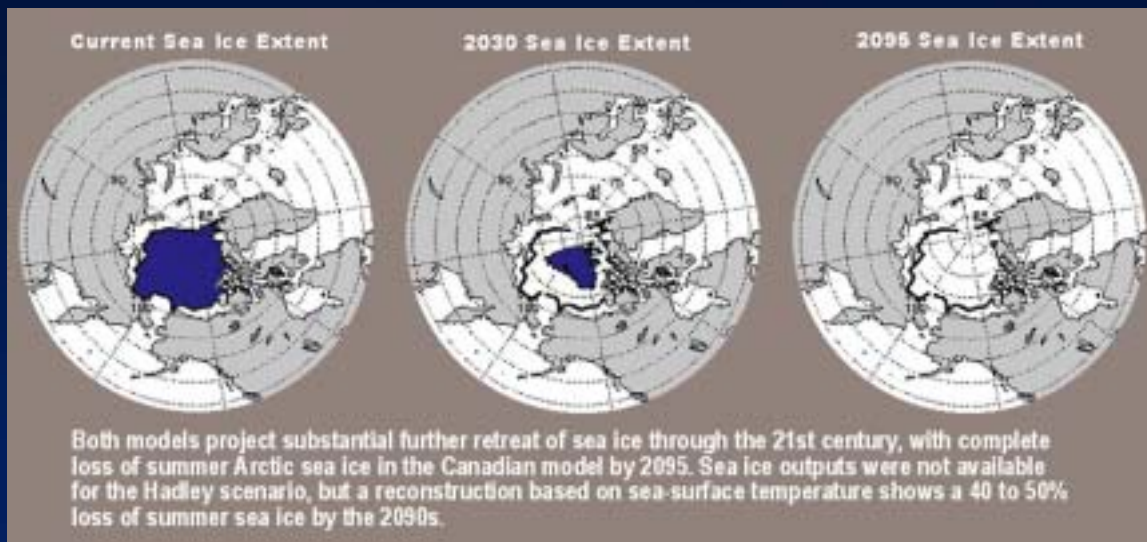
Observed Changes in the Arctic:

- Increases in precipitation
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- Thawing of previously frozen ground
- Variations in the ranges of animals and ecosystems
- Increases in storm surges and coastal erosion



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- Increases in storm surges and coastal erosion
- Reduced sea ice thickness and extent





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- Reduced sea ice thickness and extent
- Increased river flows in Siberia



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- Reduced sea ice thickness and extent
- Increased river flows in Siberia
- Warming of the Arctic Oceanic waters

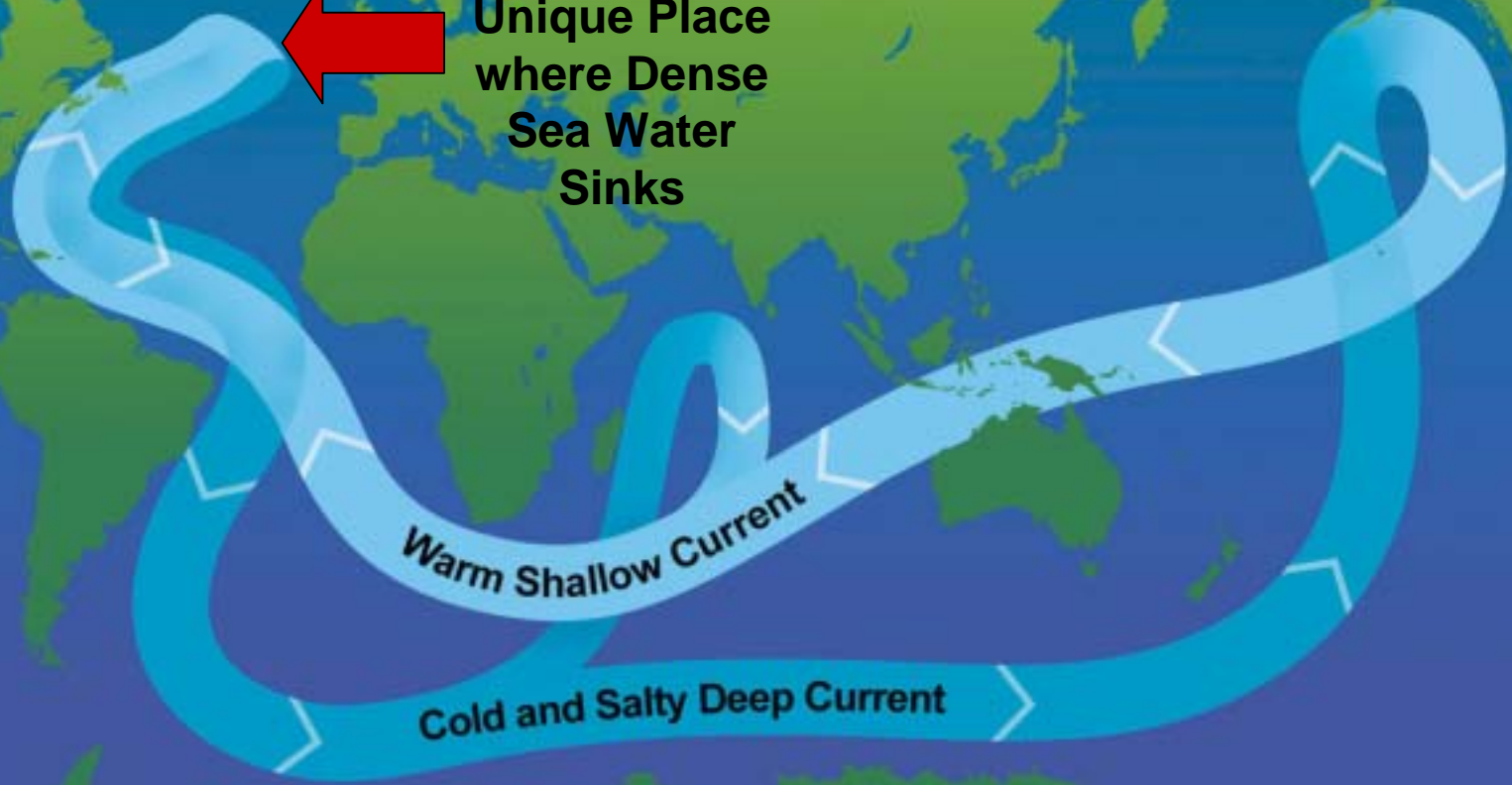


Great Ocean Conveyor Belt

There is increasing interest in the stability of deep water formation in the North Atlantic that controls the warmer climate in Europe.



Unique Place
where Dense
Sea Water
Sinks

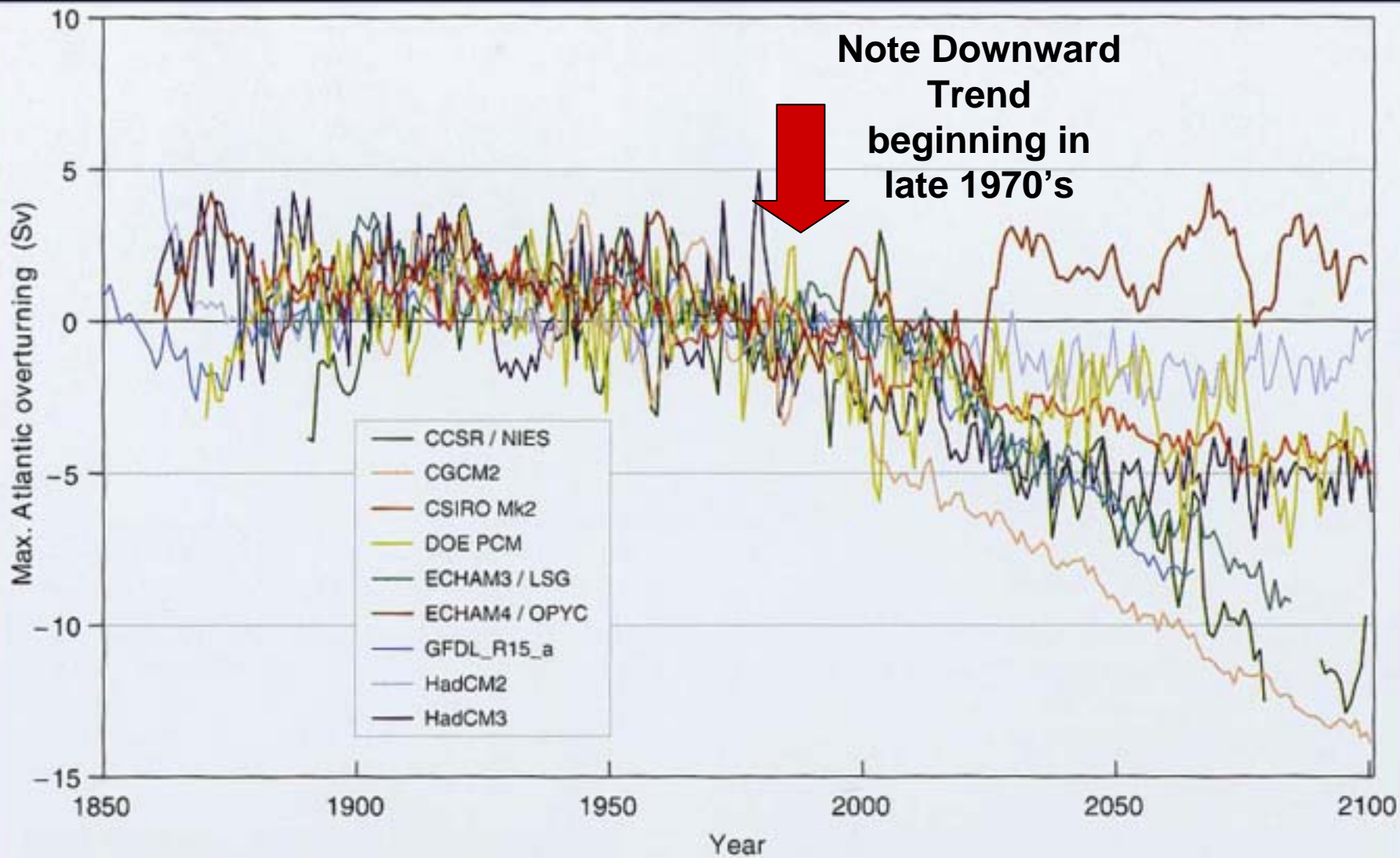


Global Thermohaline Circulation Pattern



Simulated Water Volume Transport Change

Atlantic Ocean





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- Record low level of stratospheric ozone
- Increases in ground levels of ultra violet radiation



ACIA's Unique Approach



Integrating Insights and Knowledge from these Perspectives



“Right now the weather is unpredictable. In the older days, the elders used to predict the weather and they were always right, but right now, when they try to predict the weather, it’s always something different....”

Z. Aqqiaruq, Igloolik 2000
*The Earth is Faster Now: Indigenous
Observations of Arctic Climate Change*

ACIA



Indigenous Culture






“We cannot make predictions anymore. We don't know if the water is going to freeze or not. We used to know what was going to happen at certain seasons but, with all the changes in the climate and the different qualities of water, we can't make those predictions anymore.”

Helen Atkinson, Chisasibi
Voices from the Bay

ACIA

Indigenous Culture



A satellite image of the Arctic region of Earth, showing a complex pattern of white and grey ice and snow. The image is taken from a high angle, looking down at the continent. The text is overlaid on the right side of the image.

The Arctic is a Preview of Earth's Future Climate

10 Years of Change in Arctic =
25 Years in Rest of the world.



What Documents will ACIA Produce

- **Scientific and Factual Analysis**: A comprehensive analyses of the changes across the Arctic region, past, current, and projections over the decades ahead that integrates both scientific and indigenous knowledge.
- **Synthesis Report** : A policy-markers summary that synthesizes the main findings of the assessment.
- **Policy Recommendations**: A set of policy/action recommendations, based on the findings from scientific analysis and indigenous insights, to the eight Arctic countries and the indigenous peoples organizations of the Arctic region.

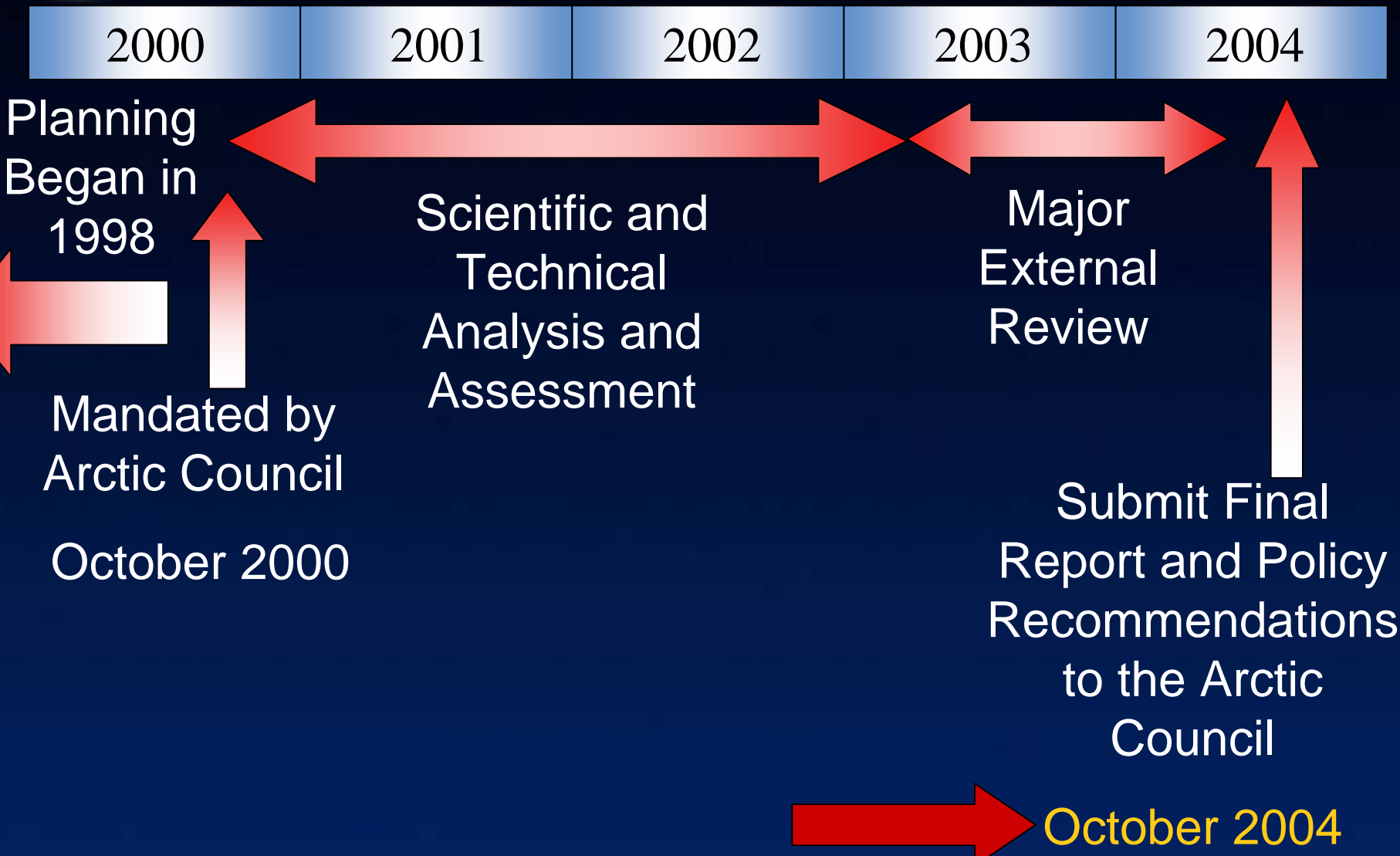


An Overview of the Scientific Report

- ***Climate and UV Changes:*** An Analysis of Past, Current, and Future Projections of Changes in Climate, Seasonal Variations in Weather Patterns, and Increases in UV Radiation Across the Arctic Region.
- ***Responses of the Arctic to Change:*** Physical and Biological Systems and their Responses to Changes Across the Arctic Region.
- ***Impacts on Residents:*** Impact on Residents of the Arctic Region, Their Settlements, Culture, and Activities.
- ***Vulnerabilities to Humans:*** Vulnerabilities to Human Settlements and their Culture
- ***Major Findings:*** An Analysis of the Major Findings and a Synthesis of the Insights Obtained.



Timeline and Schedule for the ACIA





ACIA Activities of Note over the Next Six Months

- **Version 1 Drafts and Review:** The chapters of the scientific document will be submitted by Oct. 15. These drafts will be subjected to the first of three reviews -- over 200 scientists and other experts (including experienced indigenous residents of the Arctic).
- **An Assessment Integration Team (AIT):** The AIT was appointed by the Assessment Steering Committee to provide detailed oversight and integration across the Chapters of Scientific Document and the Synthesis Document. The AIT met in June and will meet again in November.
- **Version 2:** Version 2 will be completed by March 2003 and submitted to external expert review.
- **The Policy Document:** Subject to the approval by the SAO's, the drafting of the Policy Document will begin after the Inari Meetings, with a Scoping Workshop and a Version 1 by May 2003.
- **The Synthesis Workshop:** A Synthesis Workshop, involving the lead authors and contributing authors, will be held in March 2003 to integrate the contents of Scientific Synthesis Documents.
- **The Synthesis Document:** Version 1 of the Synthesis Document will be drafted by 7.15.03
- **Version 3 all Chapters:** Version 3 will be completed mid-summer 2003, including full editing with graphics, tables, charts, etc..
- **Report to the SAO's at Spring SAO meeting in Iceland.**



The ACIA Websites Contains Additional Information about the Assessment

ACIA web site (www.acia.uaf.edu)

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- Robert Corell, ACIA Chair: global@dmv.com

Thank You



johannesburg world summit
2002

people, planet and prosperity



Arctic Council was Present





Ubuntu Village was the gathering places for many “Side-Events.”

The Arctic Council “Side Event” was held here.



Science, Technology, and Innovation at Johannesburg

There were eight days of “Side Events” and session on S&T of relevance to sustainable development. The Arctic Council’s contribution was focused on the climate assessment. Topics range from our Arctic Council “Side Event” to others on emerging diseases and their impact on SD and to linking traditional knowledge and scientific insights to SD -- a total of forty-three (43) half day or evening sessions on S&T alone. There were always multiple sessions at any one time.



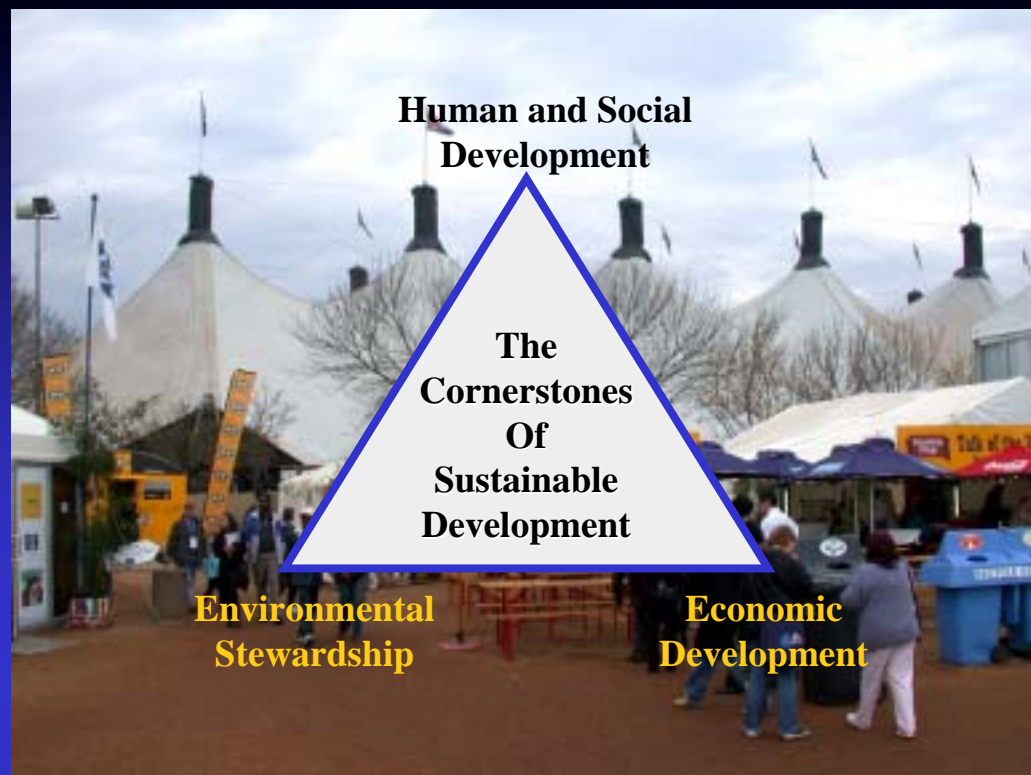
Johannesburg sessions were serious with cultural events to enrich the insights on the important issues of sustainable development.





Johannesburg was serious, yet festive and a place for all to offer their message. Science, economics, cultural heritage, poverty and hunger, trade, finance -- a long list of issues fundamental to sustainable development.

However, the simple recognition that social and human development, economic development and environmental stewardship must be considered together and adequately integrated may be the summit's greatest contribution. *It is important to note that the WSSD documented its support of initiatives to assess the consequences of climate change, such as the Arctic Council initiative, including the environmental, economic and social impacts on local and indigenous communities.*



Thank You