

SDI Structure, Access, Usage and Expansion

The Arctic Spatial Data Infrastructure

To join the teleconference:

Toll-free in Canada & US: **1-877-413-4790**

Ottawa and International: **1-613-960-7514**

**Teleconference ID:
748 918 8**



Day 3 COIN Workshop:

Theme: Data linkage between CGDI and existing databases

Wednesday, June 18		
Theme: Data linkage between CGDI and existing databases		
8:30 am	COIN data strategy introduction	Chad <u>Gubala</u>
9:00 am	CGDI/Arctic SDI structure, access, usage and expansion strategies	Conference call with CGDI technical experts in Ottawa/Vancouver
9:00 -9:30	Introduce Arctic Spatial Data Infrastructure	Anna <u>Jasiak</u>
9:30-10:30	Open floor to questions and dialogue	All
mid morning	<i>Coffee break</i>	
11:00	Existing and planned Yukon natural resource databases - structures, status, use and maintenance	Erin Light, Yukon <u>Geomatics</u>
Noon	<i>Lunch</i>	
1:30	Yukon IT data storage, retrieval and transmission capacities and objectives	Yukon IT



The Arctic Spatial Data Infrastructure (Arctic SDI)

A collaboration between the Arctic Council and the national mapping authorities of the Arctic



Need:

There is a need for integrated maps and applications in the Arctic region to provide politicians, governments, scientists, private enterprises and citizens in the Arctic with access to geographically related arctic data, digital maps and tools

What is The Arctic SDI?

The National Mapping Agencies of the member states of the Arctic Council are collaboratively developing data, policies, technologies and standards

Benefits:

Improve basis for decision making, through the provision of facts to better facilitate economic development, integrated planning, developing infrastructures and performing search and rescue operations, while managing impacts on the Arctic environment and society



Arctic SDI Vision and Mission



Arctic SDI Vision:

- based on sustainable co-operation between mandated national mapping organizations
- Will provide access to spatially related reliable information across the Arctic
- facilitate monitoring and decision making.

Mission:

- To provide the best Geodata for the Arctic region
- support tools for data discovery, access and sharing.



Why is There a Need for an Arctic SDI?

- Find, assess/visualize, access & integrate data across various platforms
- Based upon common standards and policies
- Circumpolar data (migratory birds, ocean sensors)
- National data (meteorological & satellite time series)
- Provincial (river temp, pH, salinity time series)
- Local (ice break up, ice thickness)
- The Arctic Spatial Data Infrastructure is being built to serve the peoples of the North in a changing Arctic.

The countries which chair the Arctic SDI synchronizes with the chairship of the Arctic Council. Canada is currently the chair of the Arctic Council and the USA will be next year.



Arctic SDI - International

- The **Arctic SDI** is a pan-Arctic cooperation between the national mapping agencies of Canada, Finland, Iceland, Norway, Russia, Sweden, USA and the Kingdom of Denmark (including the administrations of the Faroe Islands Home Rule and the Greenland Self-Government).
- The Arctic SDI **vision** was formulated in 2011:
"An Arctic SDI – based on sustainable co-operation between mandated national mapping organisations – will provide for access to spatially related reliable information over the Arctic to facilitate monitoring and decision making".



Objectives to Support Data Issues

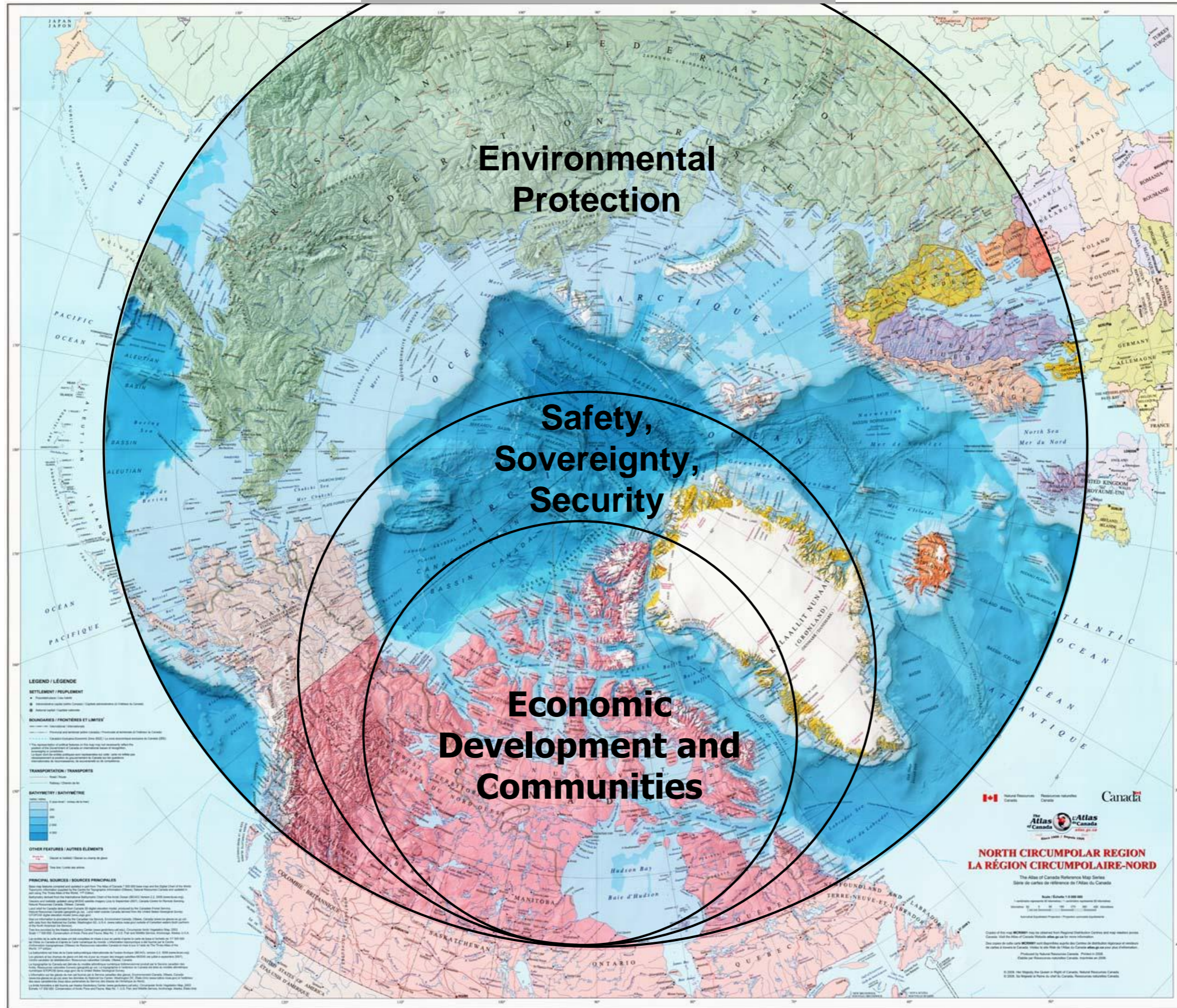
- Specifically, the **objectives** of the Arctic SDI are to jointly develop and administrate:
 - Reference data as Web Map Services to establish a common image and vector base for the Arctic context at nominally 1:250,000-scale
 - A searchable metadata-catalogue of map-able data resources (base maps and other geo-referenced thematic data and services)
 - A Web portal as primary user interface to search the catalogue and enable visual analysis of multiple base maps, thematic maps, and geographic data
 - Supporting tools for Data sharing such as Single Sign-On, Licensing tools and support application development



Arctic SDI - Benefits

- When operational, the Arctic SDI is expected to result in the following benefits:
 - Users, such as the Arctic Council, the Arctic Council working groups, the Arctic research community, government institutions, Indigenous Peoples, NGO's, private enterprises and individual citizens will **have easy access to relevant and updated geographic and thematic information covering the entire circumpolar region** – data that can be used for many purposes.
 - A **distributed regional Arctic infrastructure consisting of interlinked servers** with high quality national geographic data will be located in each of the eight arctic countries.
 - Possibilities will be created for users to **connect to web map services and simultaneously access, view, and explore** several types of geographic and thematic information concerning the Arctic Region.
 - Daily use of the Arctic SDIs web map and other services by national authorities, schools and universities in the Arctic and elsewhere.
 - Use of the **Arctic SDI services by private enterprises** when planning and developing business opportunities
 - Use of the **Arctic SDI by both public and private international projects** and cross border cooperation.





**Environmental
Protection**

**Safety,
Sovereignty,
Security**

**Economic
Development and
Communities**

LEGEND / LÉGENDE
SETTLEMENT / PEUPLEMENT
• Town/Village
• International Airport
• International Seaport
BOUNDARIES / FRONTIÈRES ET LIMITES
— National boundary
--- Provincial boundary
--- Territorial boundary
TRANSPORTATION / TRANSPORTS
— Road
— Rail
BATHYMETRY / BATHYMETRIE
0-200
200-500
500-1000
1000-2000
2000-3000
3000-4000
4000-5000
OTHER FEATURES / AUTRES ÉLÉMENTS
— Ice shelf
— Ice cap
— Ice sheet
PRINCIPAL SOURCES / SOURCES PRINCIPALES
— Topographic data from the International Hydrographic Organization (IHO) S-3000 series
— Bathymetry data from the International Hydrographic Organization (IHO) S-3000 series
— Land use and cover data from the National Aeronautics and Space Administration (NASA) Landsat satellite imagery
— Population data from the National Statistical Service (NSS) of the respective countries
— Administrative boundaries from the National Statistical Service (NSS) of the respective countries
— Place names from the Geographical Names Board of Canada (GNBC) and the Geographical Names Board of the United States (GNBS)

Canada
Atlas of Canada
NORTH CIRCUMPOLAR REGION
LA RÉGION CIRCUMPOLAIRE-NORD
The Atlas of Canada Reference Map Series
Série de cartes de référence de l'Atlas du Canada
Scale: 1:5 000 000
© 2008 Her Majesty the Queen in Right of Canada, Natural Resources Canada
© 2008, Sa Majesté la Reine en chef du Canada, Ressources naturelles Canada

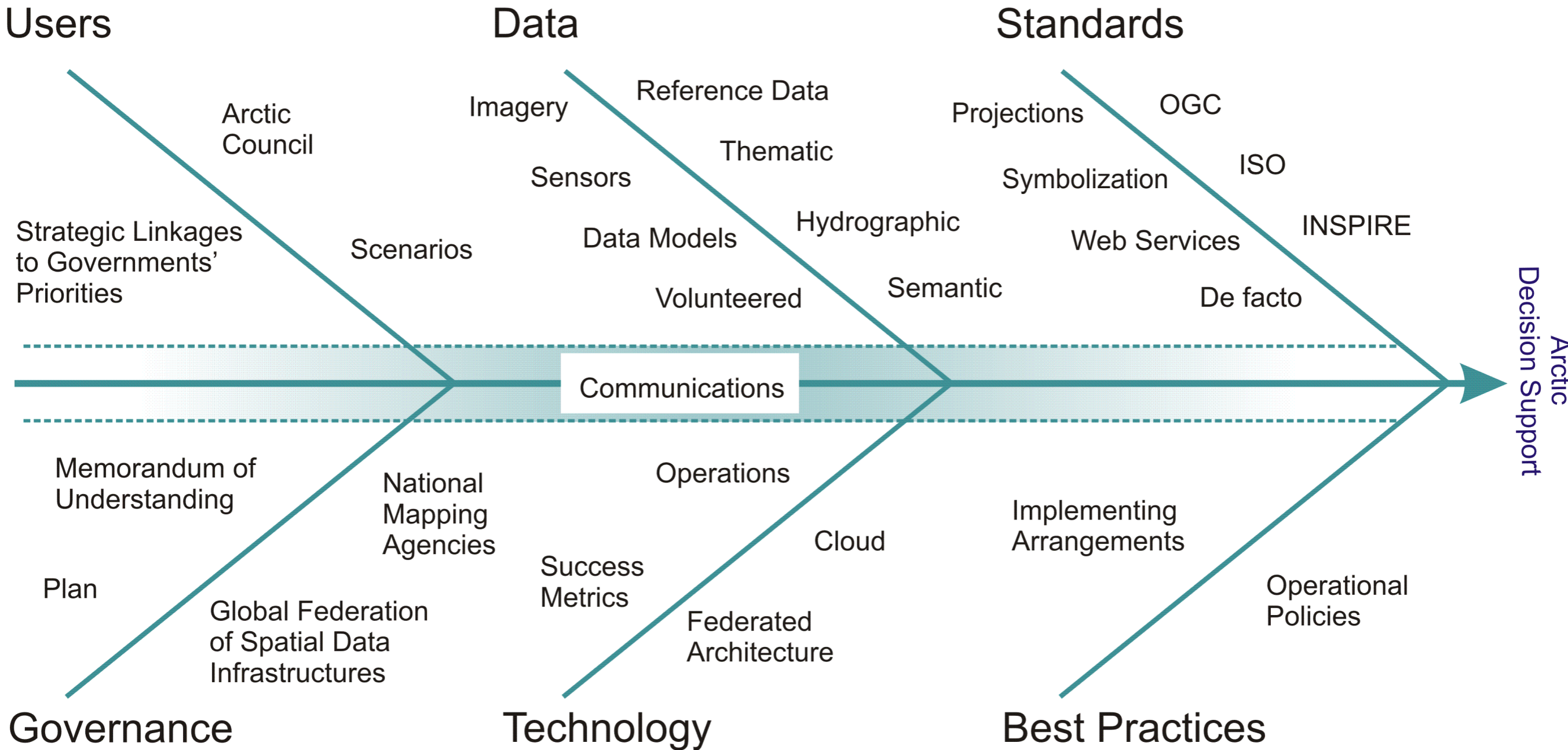


Ressources naturelles
Canada

Natural Resources
Canada

Canada

Reference Model for the Arctic Spatial Data Infrastructure (Arctic SDI)

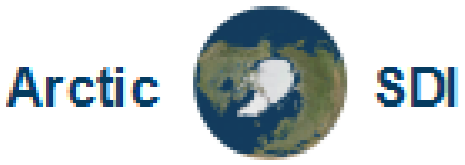












Context of Arctic Spatial Data Infrastructure

Global	Application Frameworks	Oskari, ArcGIS Online, GeoPortals, Thematic Portals , OSM
	Infrastructures	GSDI, INSPIRE/ELF, NSDI, CGDI, FGP
	Operational Policies	Intellectual Property, Private Information, Data Sharing, VGI, Cloud Computing, Open Source, Licensing, Archiving
	Standard Bodies	ISO, OGC
	Technology Frameworks	Operations, Success Metrics, GeoPortal Cloud, Architecture
National	National Base Map Data	Russia, Finland, Sweden, Norway, Kingdom of Denmark, Iceland, Canada, USA
Local Data Sources	State/ Province/ Canton/ Territory	Examples Include: Real Time Feeds, Vector, Hydrographic Data Series, Raster Sensor Data (satellite imagery), research documentation
	Municipality	
	Private Sector	
	Open Street Map	



SDI Components

	Application Framework	Standard Bodies	Data	Technology	Geospatial Policies
International 	OSKARI Cloud GeoPortal	INSPIRE  	Imagery, sensors, data models, reference data, hydrographic, etc.	Operations, Success Metrics, Cloud, Architecture	Privacy, Intellectual Property, Copyright, Licensing, Data Sharing, etc
National CGDI 	GeoPortals  	 	Imagery, sensors, data models, reference data, hydrographic, etc.	Architecture, operations	Open Data, Volunteered Geographic Information (VGI), Big Data, etc
Regional Provincial and Territory SDI's	Regional GeoPortals:  		Imagery, sensors, data models, reference data, hydrographic, etc.	Architecture, operations	Privacy, Intellectual Property, Copyright, Licensing, Open Data, etc

COIN User Needs and Technical Considerations

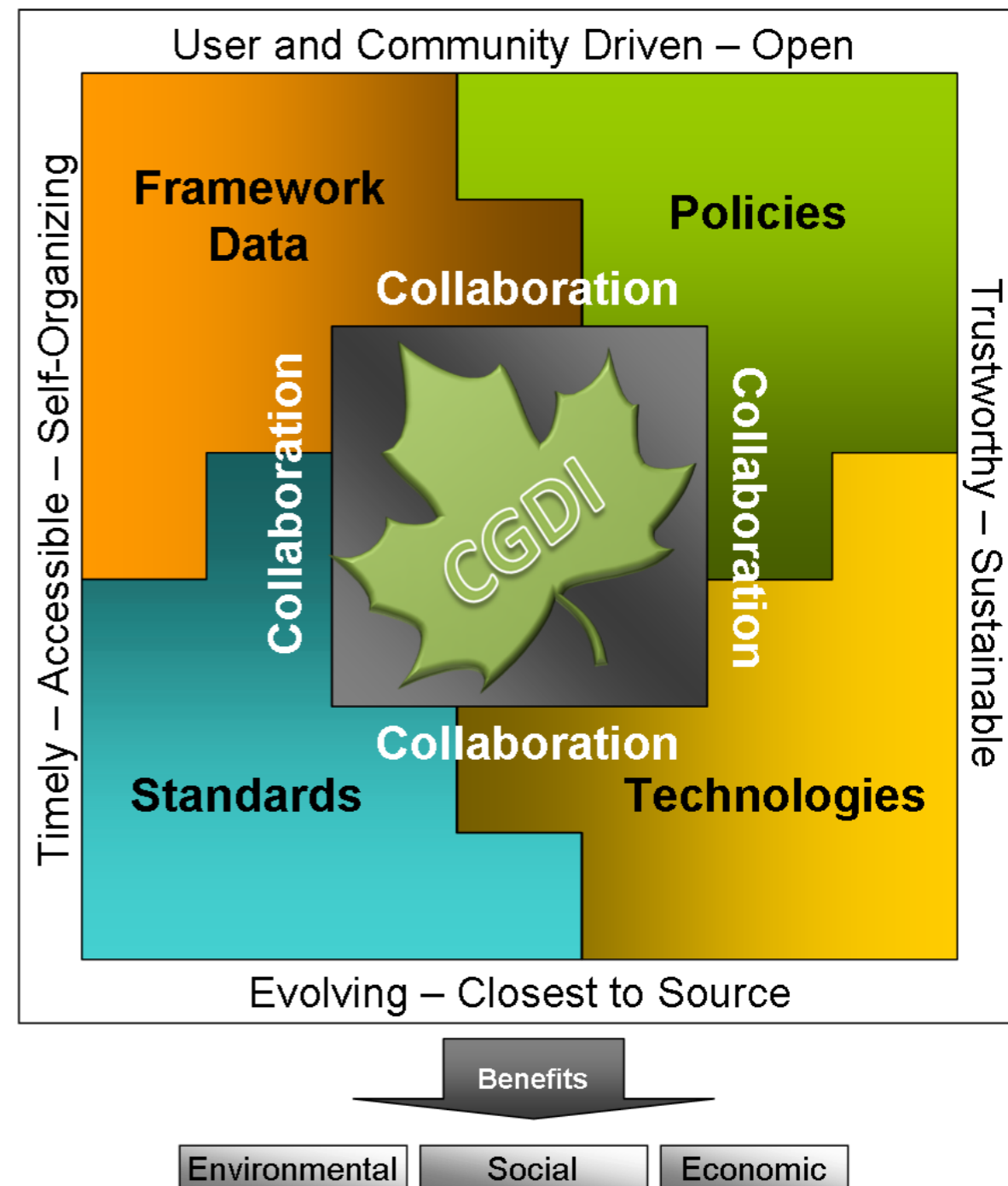
A Panel Discussion



In Review – The CGDI Example

CGDI Components and Guiding Principles

- The CGDI is an **online network of resources** that improves the sharing, use and integration of information tied to geographic locations in Canada.
- In essence, via **collaboration**, the CGDI is the convergence of **policies, standards, technologies, and framework data** necessary to harmonize all of Canada's location-based information.
- Through the CGDI, Canadians can **discover, access, visualize, integrate, apply and share quality location-based information**. The CGDI allows citizens to gain new perspectives into social, economic, and environmental issues and make effective decisions.



CGDI – Overview; CGDI Vision, Mission and Roadmap:
<http://geoconnections.nrcan.gc.ca/18>



QUESTIONS?



THANK YOU !

Anna Jasiak

Advisor, GeoConnections

Anna.Jasiak@NRCan-RNCan.gc.ca

Cameron Wilson

Manager, GeoConnections

Cameron.Wilson@NRCan-RNCan.gc.ca
@NRCan-RNCan.gc.ca

Cindy Mitchell

Advisor, Federal Geospatial Platform

Cindy.Mitchell@NRCan-RNCan.gc.ca

Jamie Rupert

Advisor, GeoAccess

Jamie.Rupert@NRCan-RNCan.gc.ca

Steven Smith

Advisor, GeoAccess

Steven.Smith@NRCan-RNCan.gc.ca

Peter Rushforth

Advisor, GeoAccess

Peter.Rushforth@NRCan-RNCan.gc.ca

Joost Van Ulden

Advisor, Federal Geospatial Platform

Joost.VanUlden@NRCan-RNCan.gc.ca

