



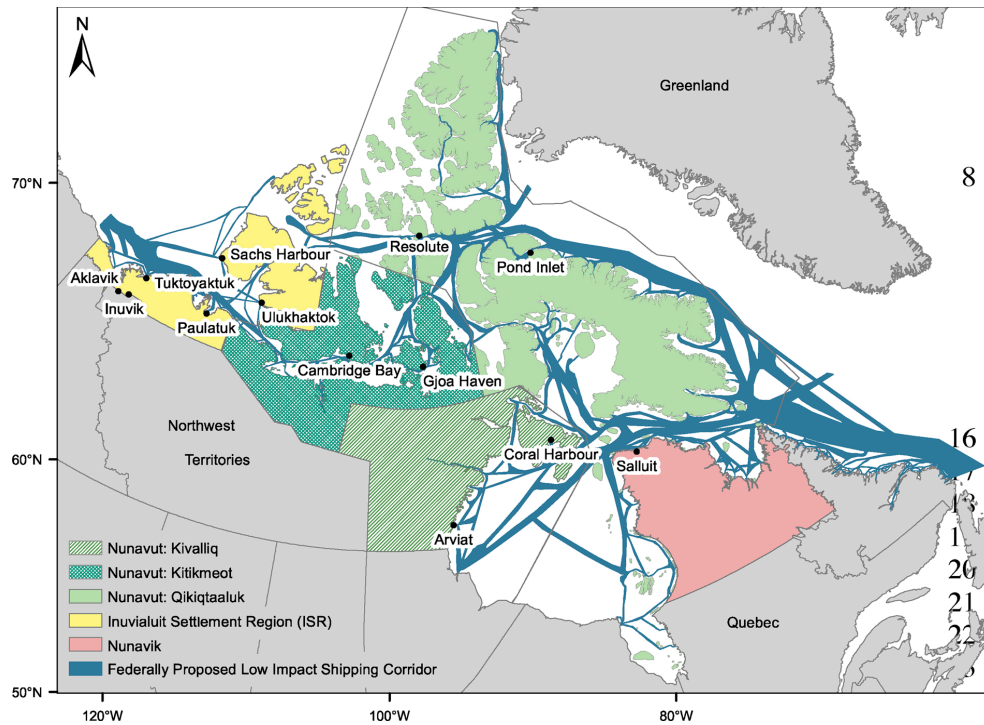
People. Development. Impact.

Challenges in incorporating local knowledge in marine spatial planning decision-support tools

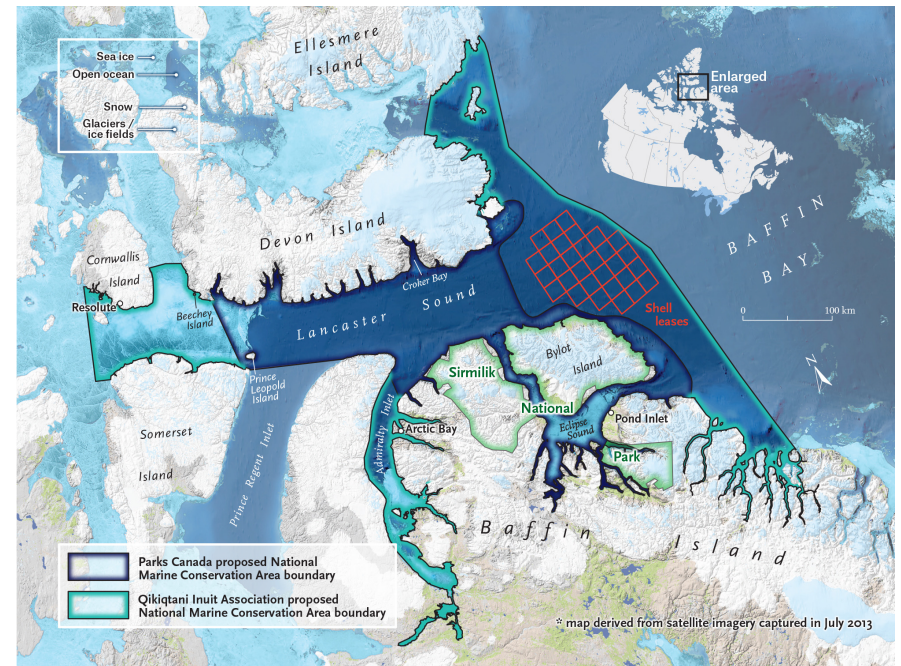
Claudio Aporta
Professor, Canadian Chair,
Marine Environmental Protection
World Maritime University (WMU),
International Maritime Organisation (IMO)

30 August 2022



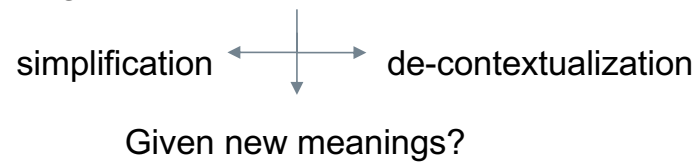


Dawson et. al. 2020

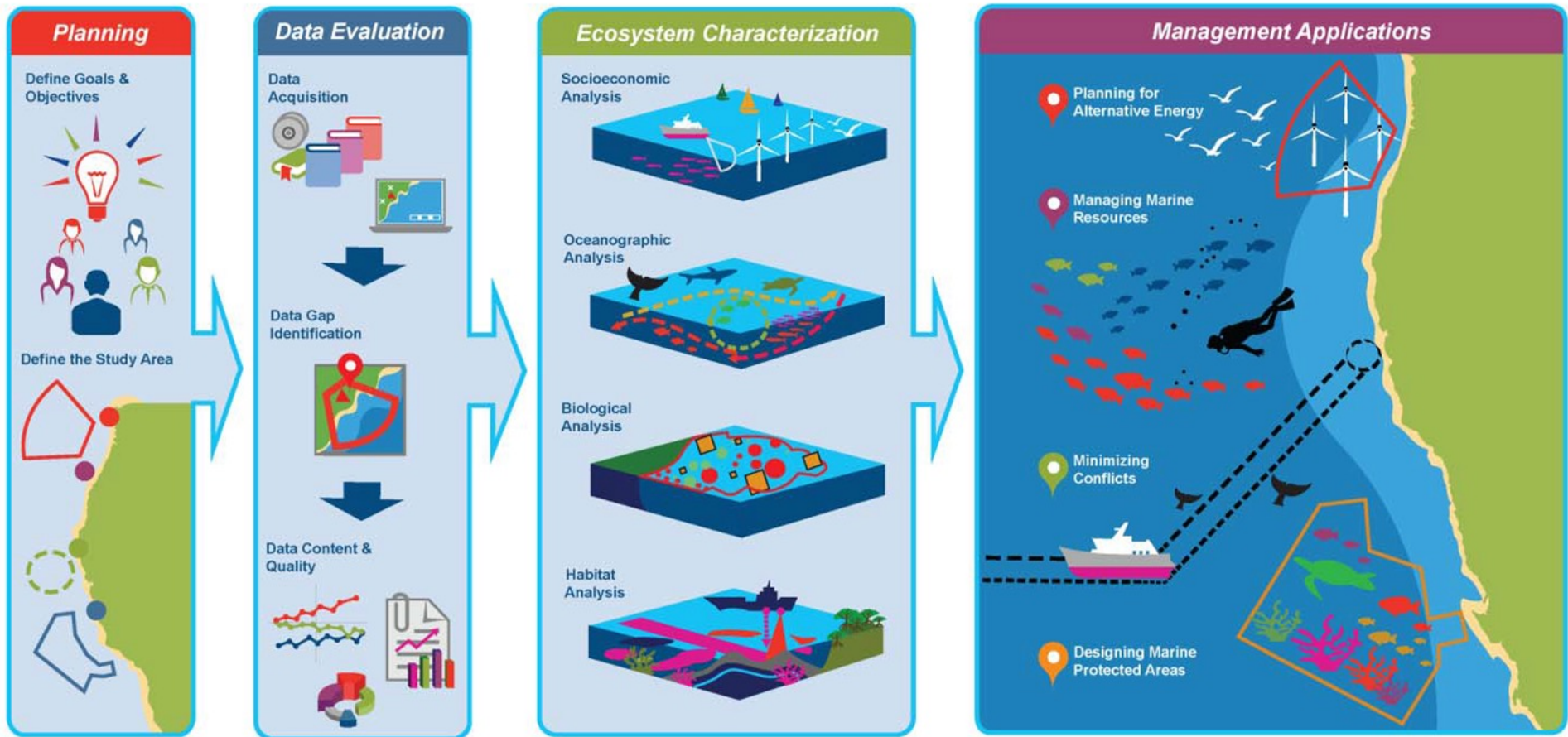


Canadian Geographic

- Communities and organizations are increasingly called upon to provide knowledge/data
- Community/local “datasets” are “integrated” with other datasets



Retrieved from: <https://coastalscience.noaa.gov/news/innovative-management-approach-aids-marine-spatial-planning/>



NCCOS's Biogeographic Assessment Framework to support marine spatial planning

Where does local knowledge fit?

Pınarbaşı, Kemal et al. "Decision Support Tools in Marine Spatial Planning: Present Applications, Gaps and Future Perspectives." *Marine policy* 83 (2017): 83–91. Web.

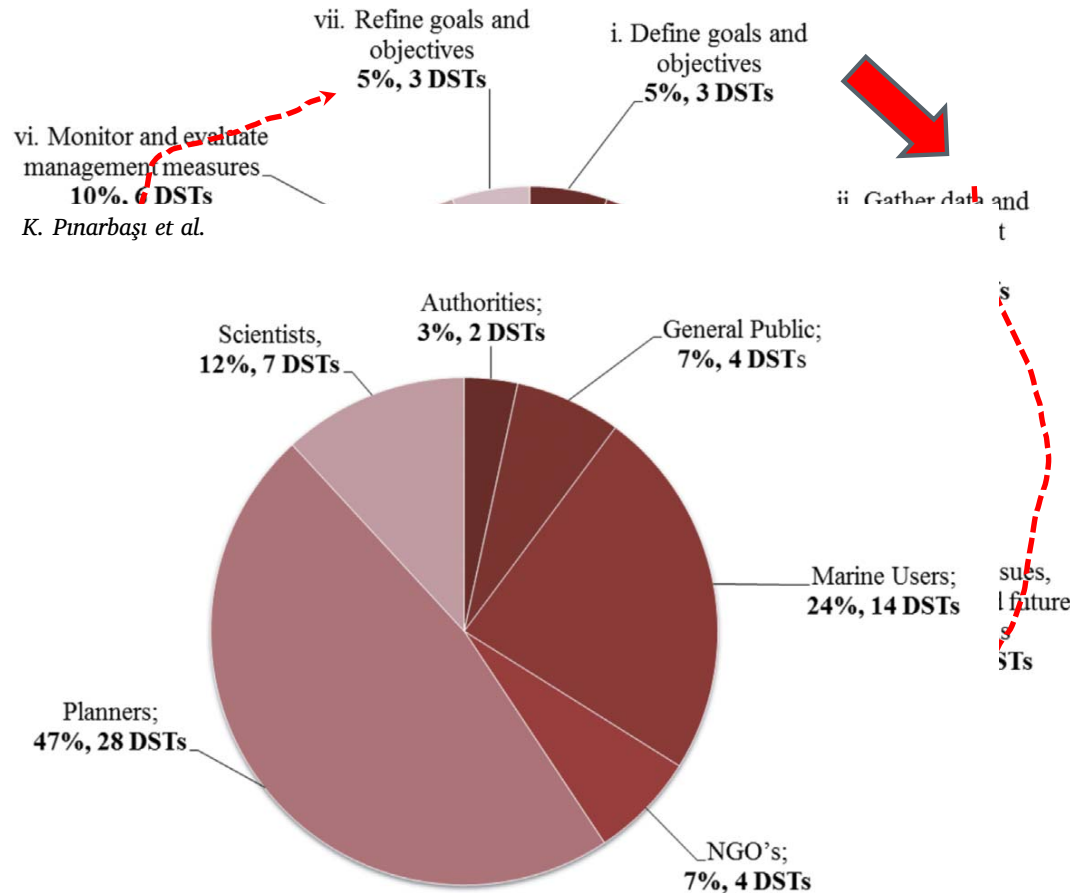


Fig. 3. Percentages number and of different type of Decision Support Tools (DST) users.

- How is local knowledge "handled" by DSSs / DSTs?
- Could local knowledge have a role in design?

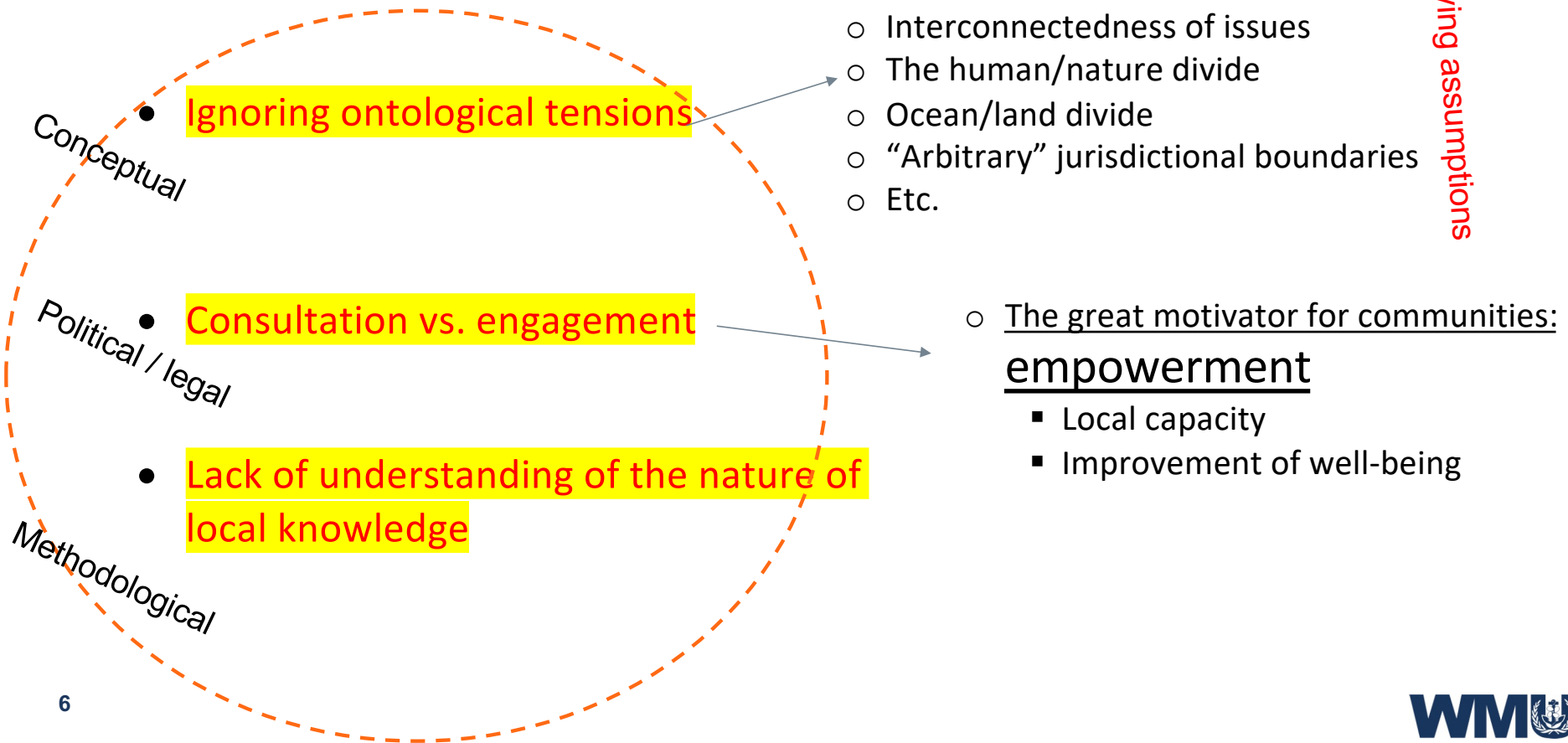
Interdisciplinary field of inquiry

Communities the weakest link in MSP?

- How to effectively incorporate local knowledge and perspectives in **DSTs that are mostly built for handling quantitative data**, designed by western/scientific assumptions, and run by external actors?

Three interconnected issues

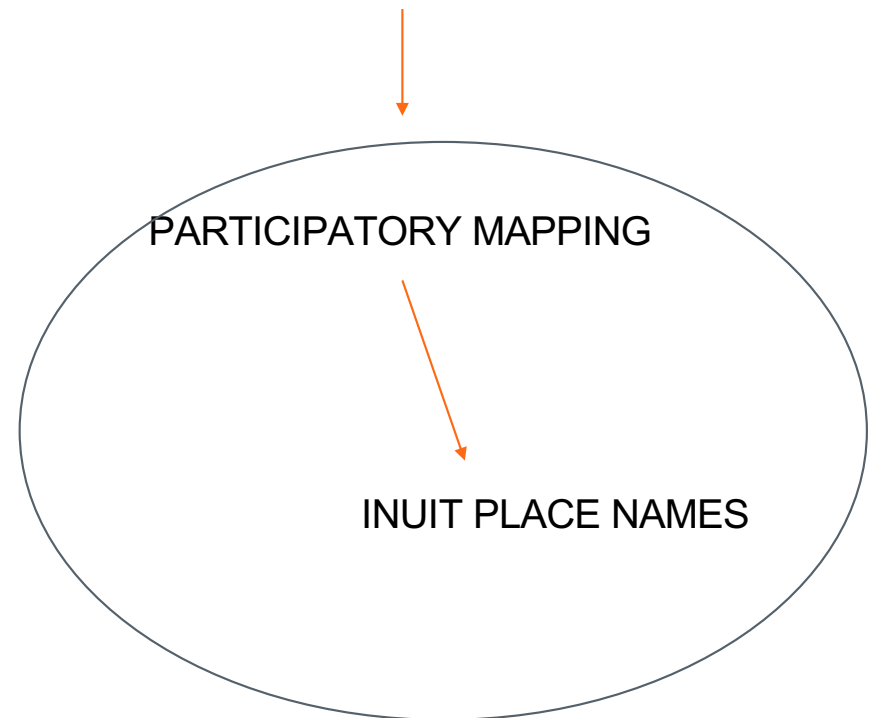
Underlying assumptions



- **The nature of local knowledge**

- Interconnected
- Observational
- Experiential (grounded in everyday life)
- Oral transmission
- Both comprehensive and specific
- Local but affected by global conditions

Community Based **Participatory Action Research** (CBPAR)



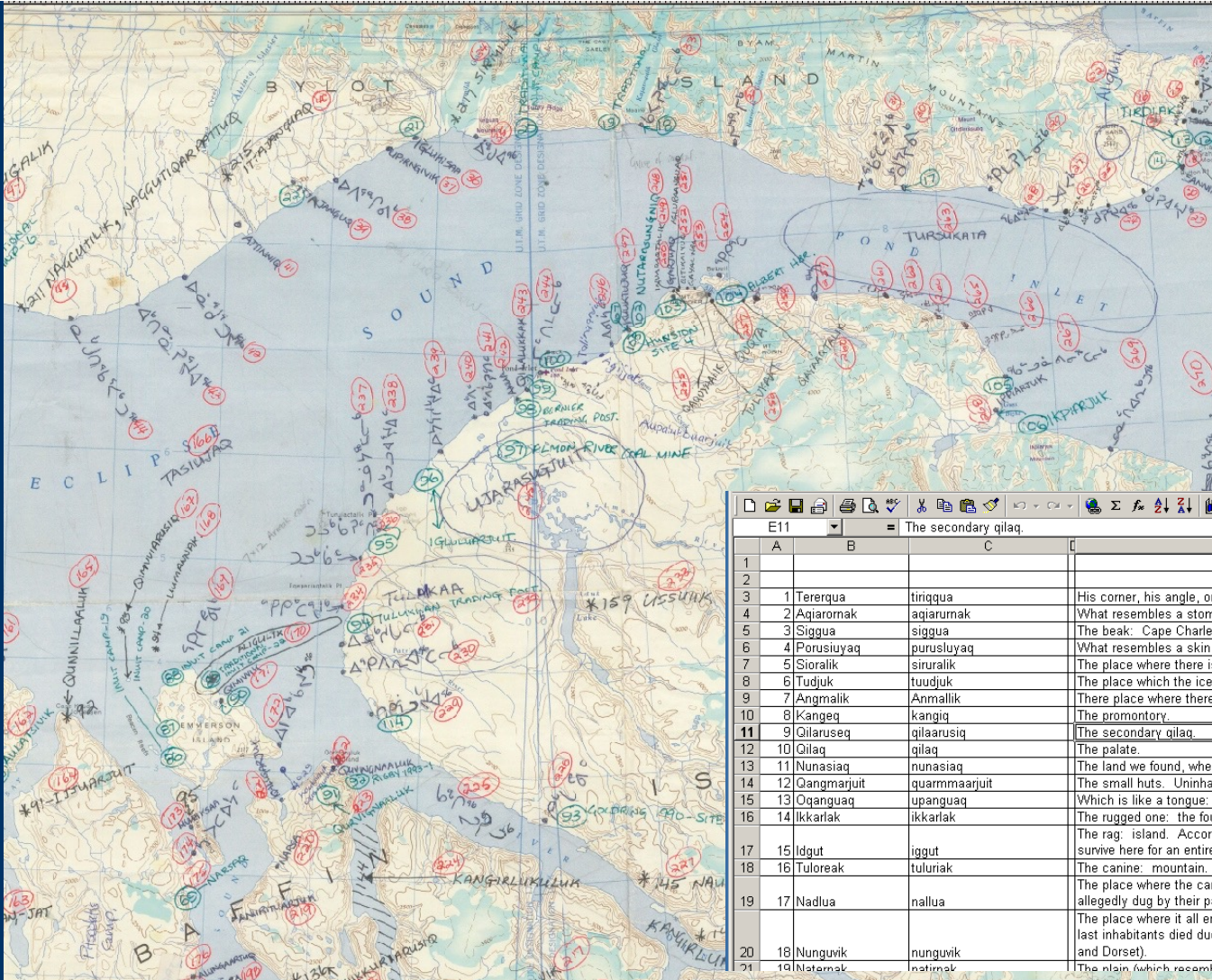


A map-making process that attempts to make visible the association between land (and ocean) and local communities.

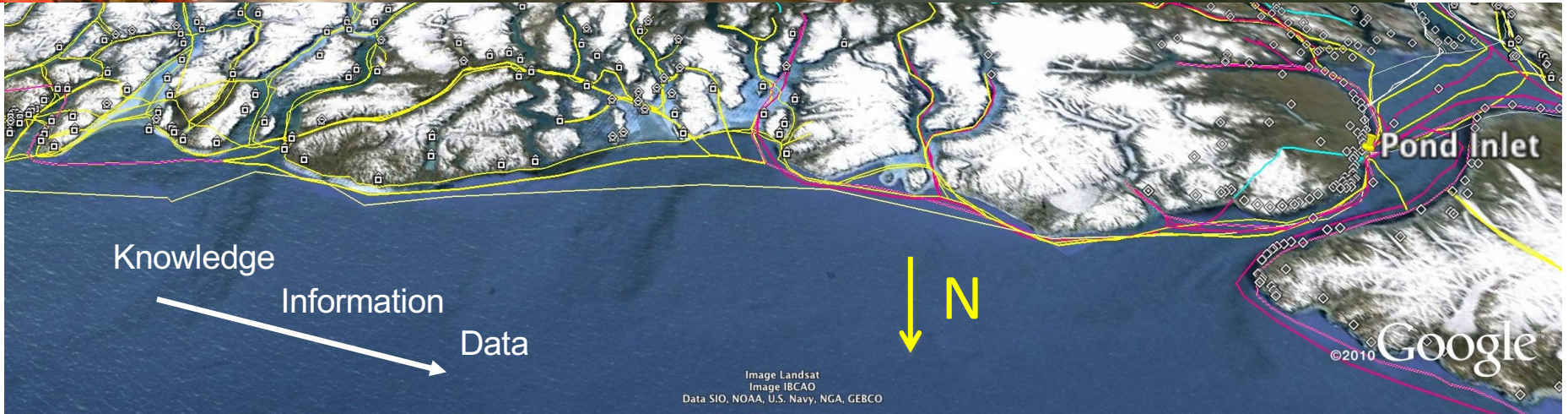
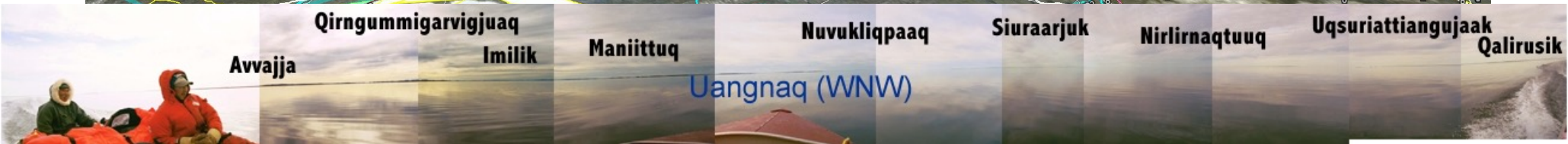
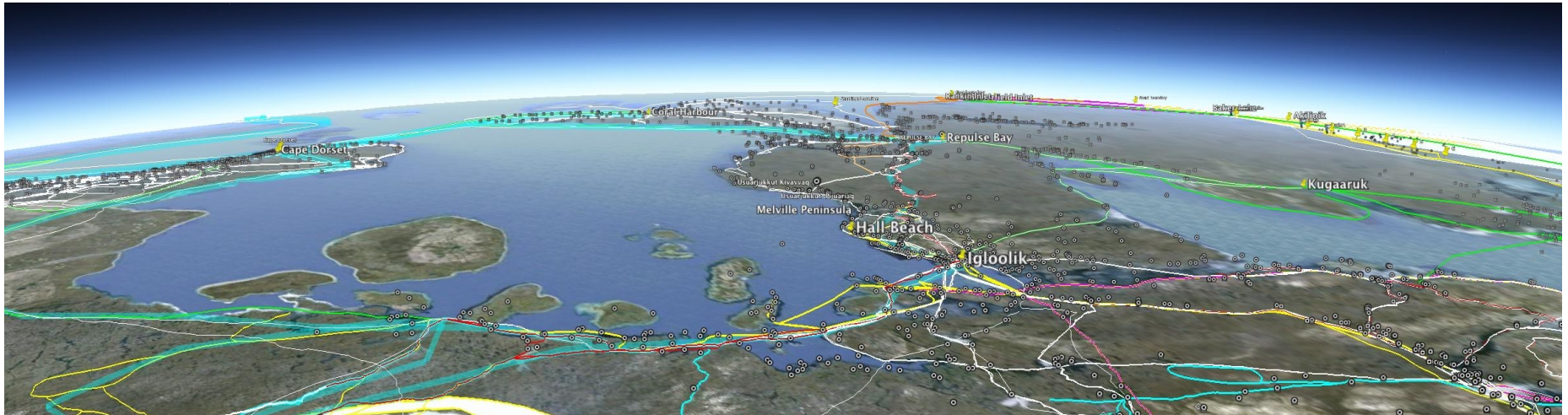
Six purposes for initiating a participatory mapping project

IFAD 2009: *Good practices in participatory mapping: A reviewed prepared for the International Fund for Agricultural Development*, IFAD

1. To help communities **articulate and communicate spatial knowledge to external agencies**
2. To allow communities to **record and archive** local knowledge
3. To assist communities in **land-use planning and resource management**
4. To enable communities to **advocate** for change
5. To **increase the capacity** within communities
6. To address resource-related **conflicts**



E11 = The secondary qilaq.				
	A	B	C	E
1				
2				
3	1 Tererqua	tiriqqua		His corner, his angle, or: the corner... (1) Cape Joy
4	2 Aqiaromak	aqiarumak		What resembles a stomach: bay.
5	3 Siggua	siggua		The beak: Cape Charles Yorke.
6	4 Porusiuq	purusluq		What resembles a skin pouch.
7	5 Sioralik	sioralik		The place where there is sand.
8	6 Tujuk	tuujuk		The place which the ice strikes: Adams Island.
9	7 Angmalik	Anmalik		There place where there is flint.
10	8 Kangeq	kangiq		The promontory.
11	9 Qilaruseq	qilaarusiq		The secondary qilaq.
12	10 Qilaq	qilaq		The palate.
13	11 Nunasiaq	nunasiaq		The land we found, where we settled.
14	12 Qangmarjuut	qangmarjuut		The small huts. Uninhabited since an epidemic decimated the population in 1944. Archaeological site.
15	13 Qanguaq	upanguaq		Which is like a tongue: Starting from the West, the second of six glaciers from the same firm descending to the
16	14 Ikkariak	ikkariak		The rugged one: the fourth glacier, bristling with seracs.
17	15 Ildut	iggut		The rag: island. According to a legend, an Eskimo, abandoned by his hunting companion, managed to survive here for an entire year.
18	16 Tuloreak	tuluriak		The canine: mountain.
19	17 Nadlua	nallua		The place where the caribou cross over to Bylot Island. An indentation is shown, close by, in the mountain, allegedly dug by their passage. Eskimo camp.
20	18 Nungvik	nungvik		The place where it all ended, where we were exterminated. Many ruins of dwellings. Tradition has it that the last inhabitants died due to a bad spell cast over them by an old woman. Important archaeological site. (Thule and Dorset).
21	19 Natemak	natmak		The plain (which resembles a floor).





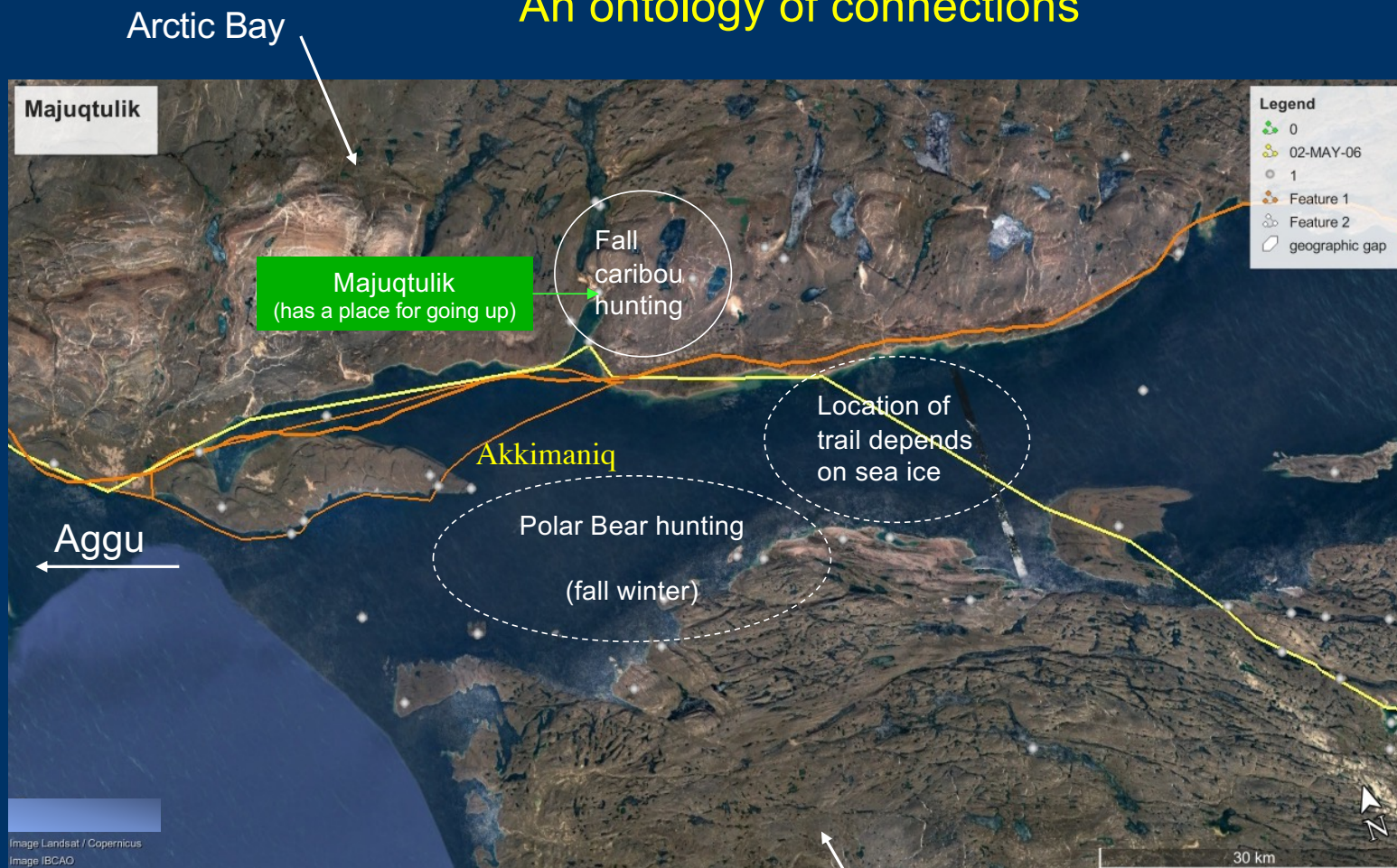
Data challenges

- Sea/land
- Narrative/context
- Social Memory
- Interconnections
- Seasonality
- Boundaries



Akkimaniq, "exposed to ice on all sides" is a point that
"crushes and grinds the ice"

An ontology of connections



Arctic Bay

Majuqtulik

Majuqtulik
(has a place for going up)

Fall
caribou
hunting

- Legend
- 0
 - 02-MAY-06
 - 1
 - Feature 1
 - Feature 2
 - geographic gap

Location of
trail depends
on sea ice

Akkimaniq

Polar Bear hunting
(fall winter)

Aggu

Image Landsat / Copernicus
Image IBCAO

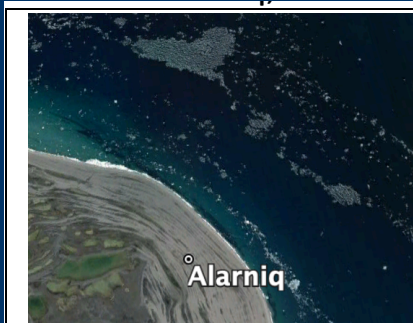
30 km

Igloolik

SEASONALITY
OF MAPPED
KNOWLEDGE

	Late fall	Winter	Summer	Spring
Majuqtulik	Caribou hunting			
Iglulik		Winter camping; walrus and seal hunting		
Naujaaliruluk			Egg gathering	
Aulativiajuk			Caribou crossing	
Aggiupinik				Camping on sea ice; seal hunting

Part of a **space/time matrix** that defines the sociality of Inuit life in the Arctic, and that involves **points of intersection or encounters**.



INTERSECTIONS DEFINING ALARNIQ

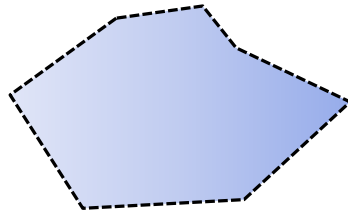
Landfast ice attaches to Alarniq

Enough people gather near Alarniq in the spring to hunt walrus

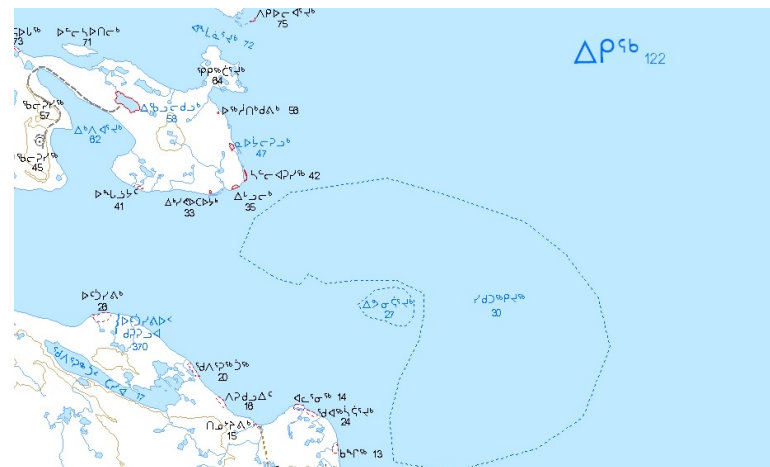
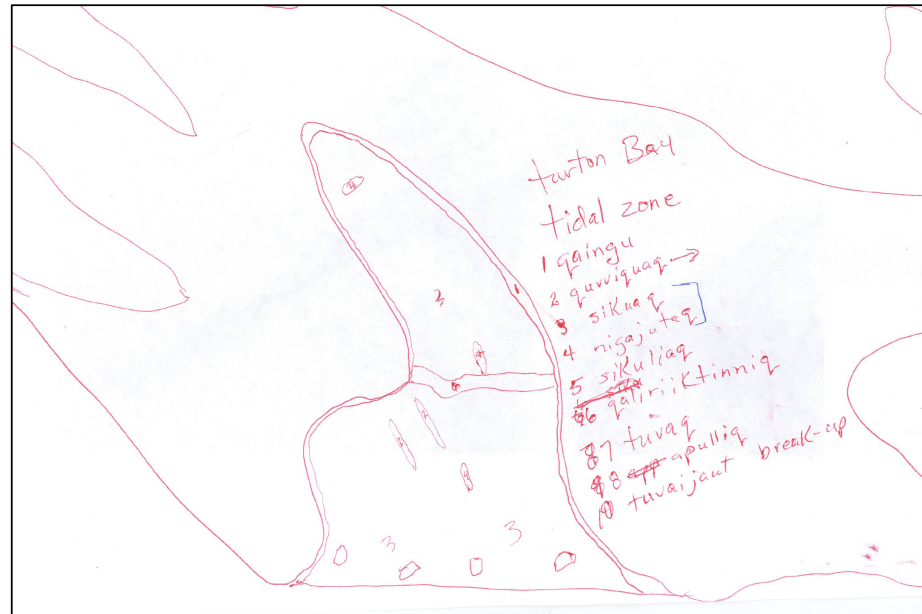
Winds and tides move moving ice towards shore/landfast ice

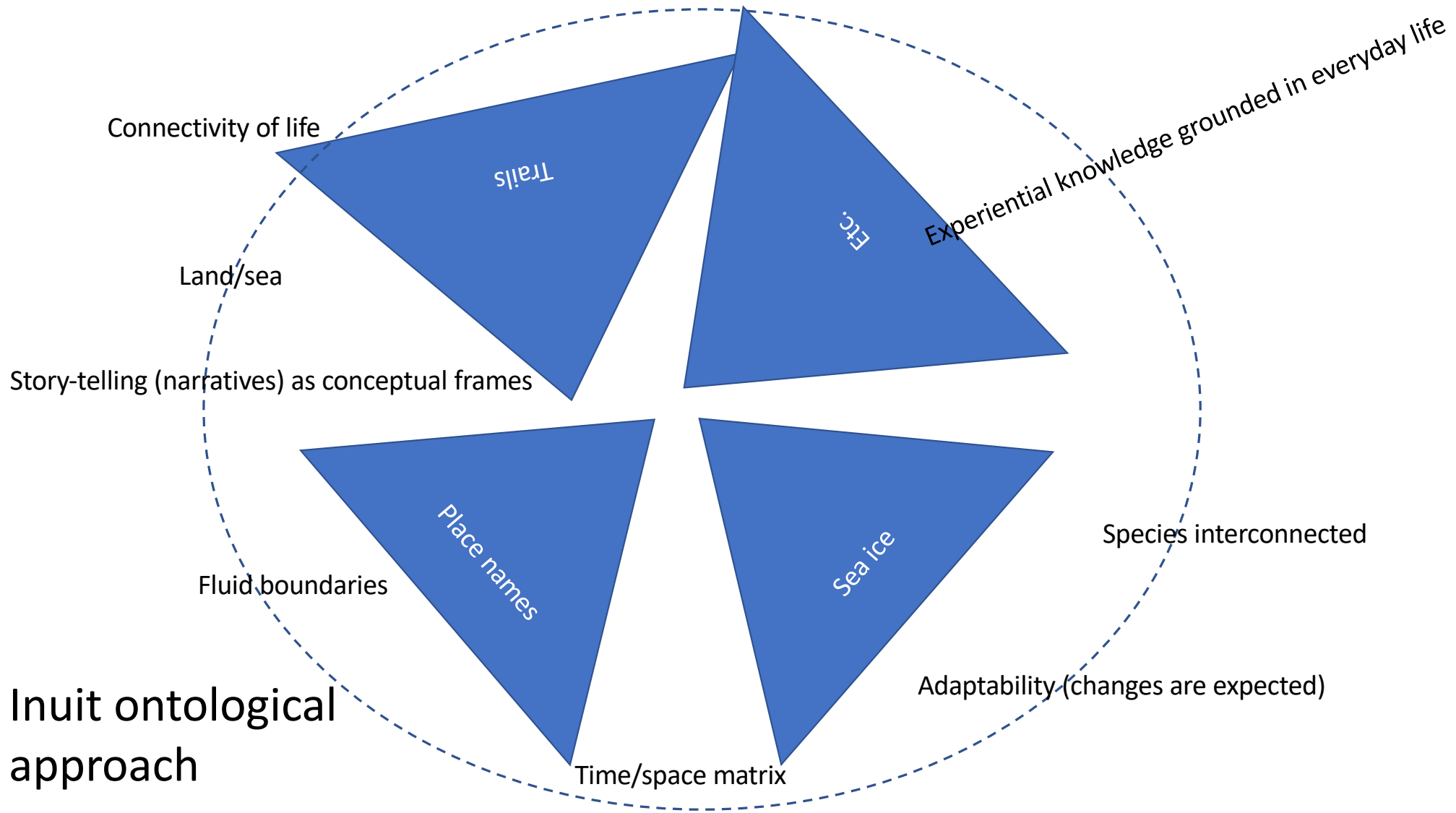
Walrus's habitat in the moving ice/floe edge

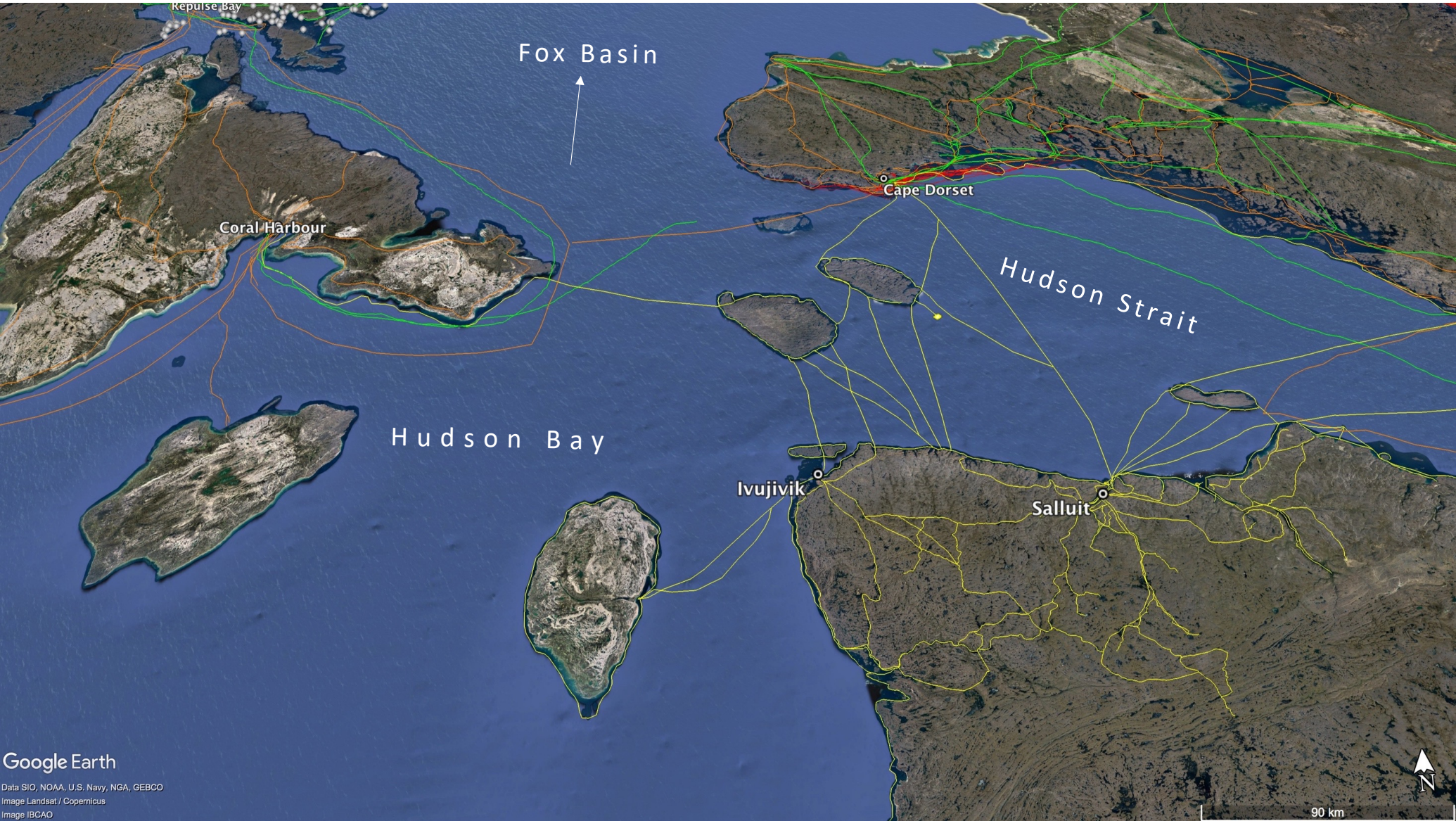
Sea ice



- Areas that fluctuate
 - Recurring and dynamic
 - Extension of home
 - Marine and land spaces
 - Hubs of life







Google Earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat / Copernicus
Image IBCAO

Path forward:

- DSS and DSTs that can account for:
 - quantitative *and* qualitative
 - scientific *and* local
 - clearly understood cross-culturally
 - *Social learning* goes both ways (knowledge co-production)
 - DSS should be supported by and enable **whole-of-government approaches**
 - Need for **enhanced data management**, ownership, sharing and curation protocols
 - **Youth capacity-building** a huge priority towards self-governance goals and reconciliation goals



People. Development. Impact.

THANK YOU

