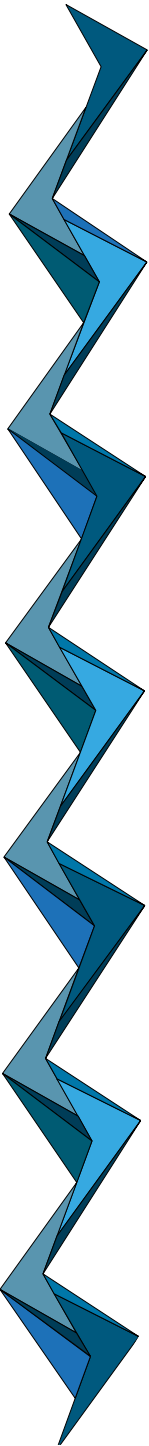


How to set up an interdisciplinary project within an OHMi in Nunavik ?



E. Avard, N. Bhiry, S. Blangy, L. Chanteloup, J-P Dedieu,
A. Delcaume, D. Haillot, A. Lamalice, et al.

© Charlie Kumarluk

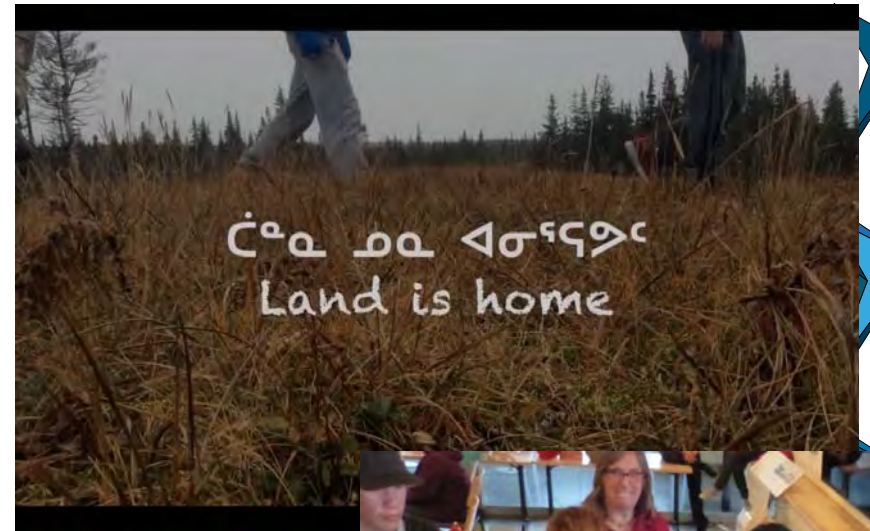


Twofold interdisciplinarity....

Constructing projects in Nunavik using...

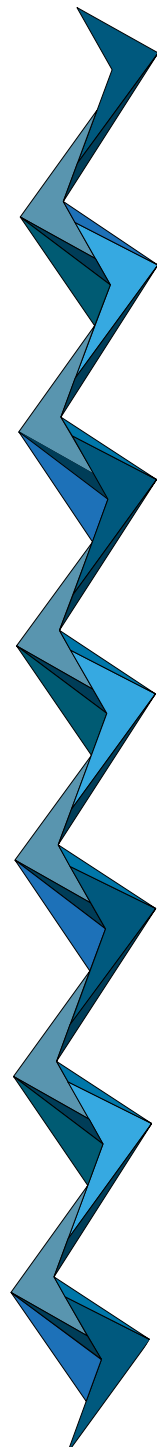
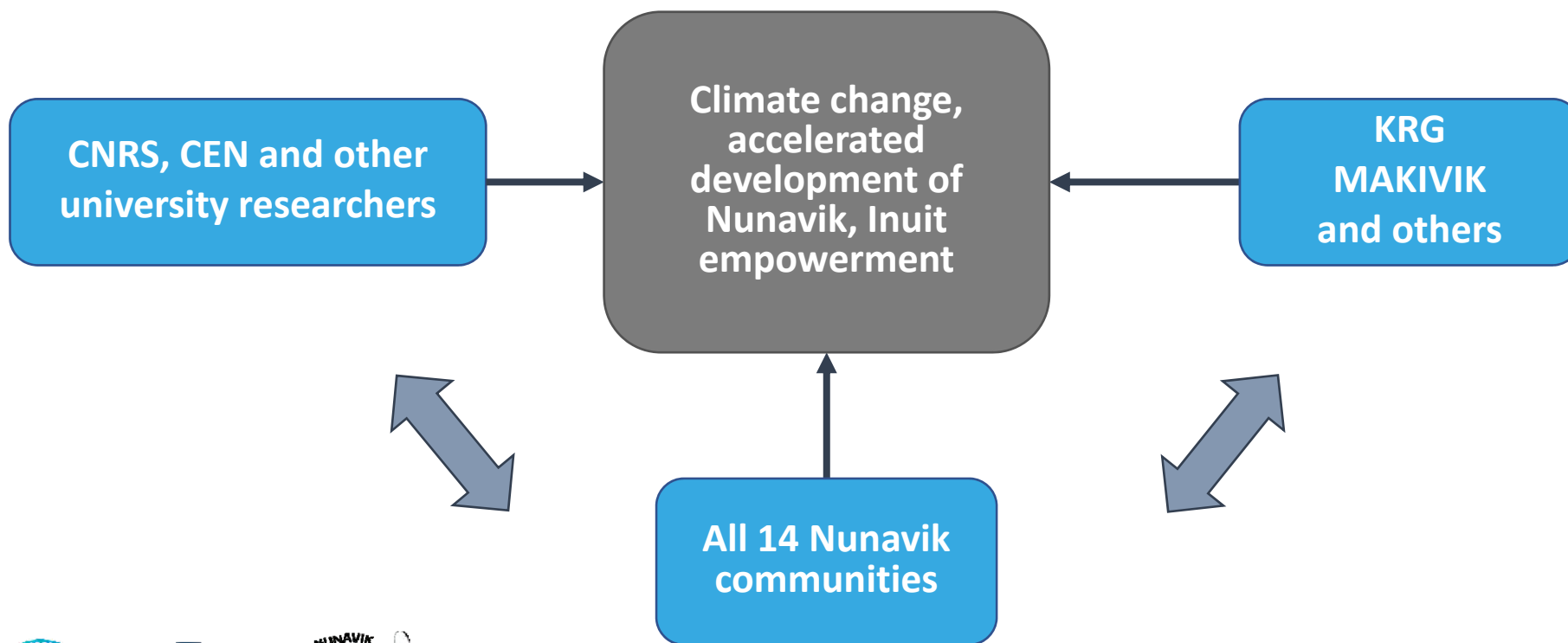


- Academic knowledge
- Traditional knowledge

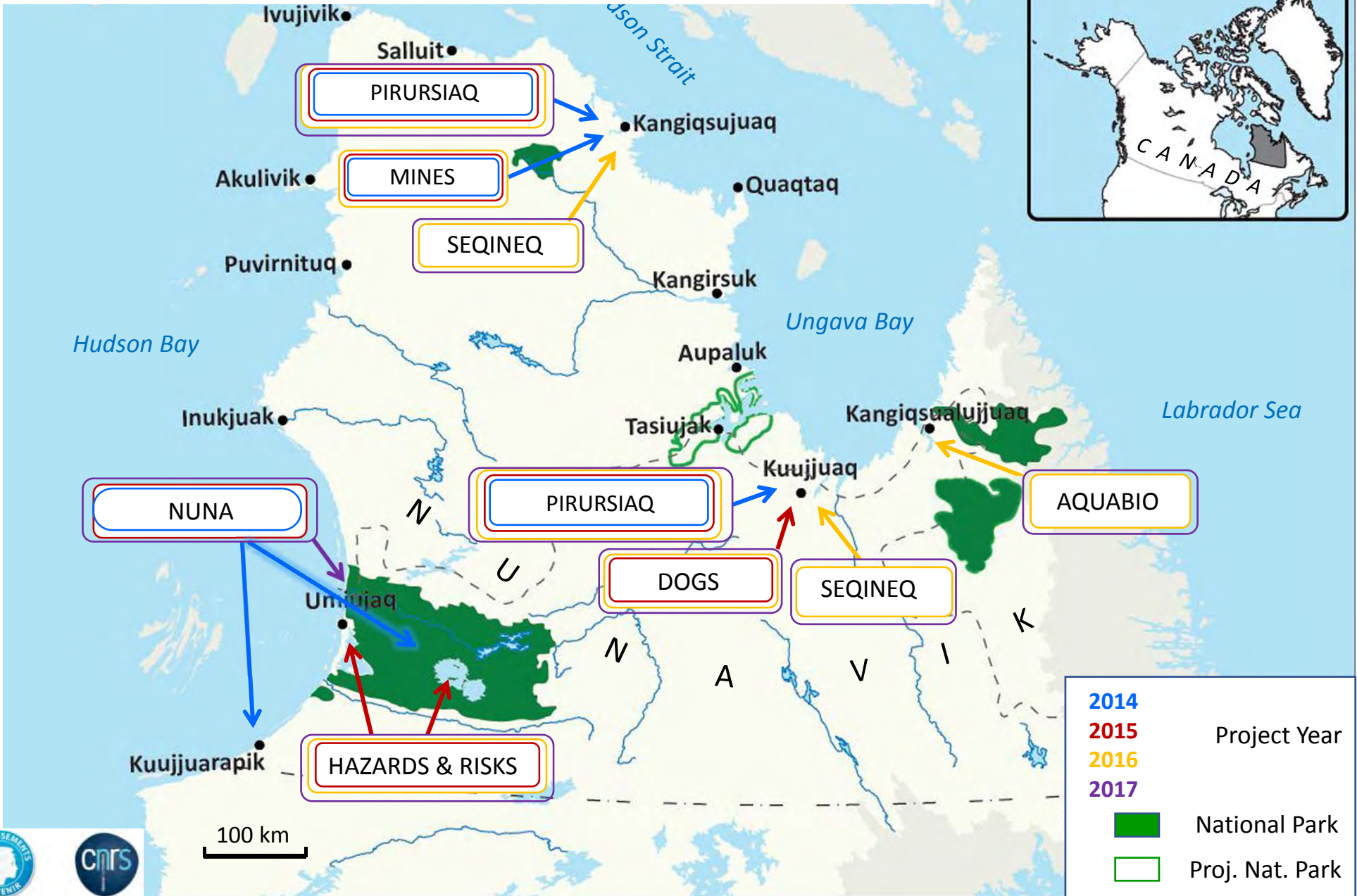


Building knowledge together =>

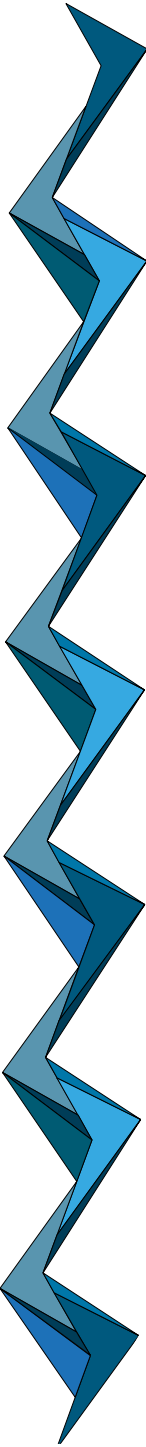
Building stakeholder networks & trust
between researchers and communities



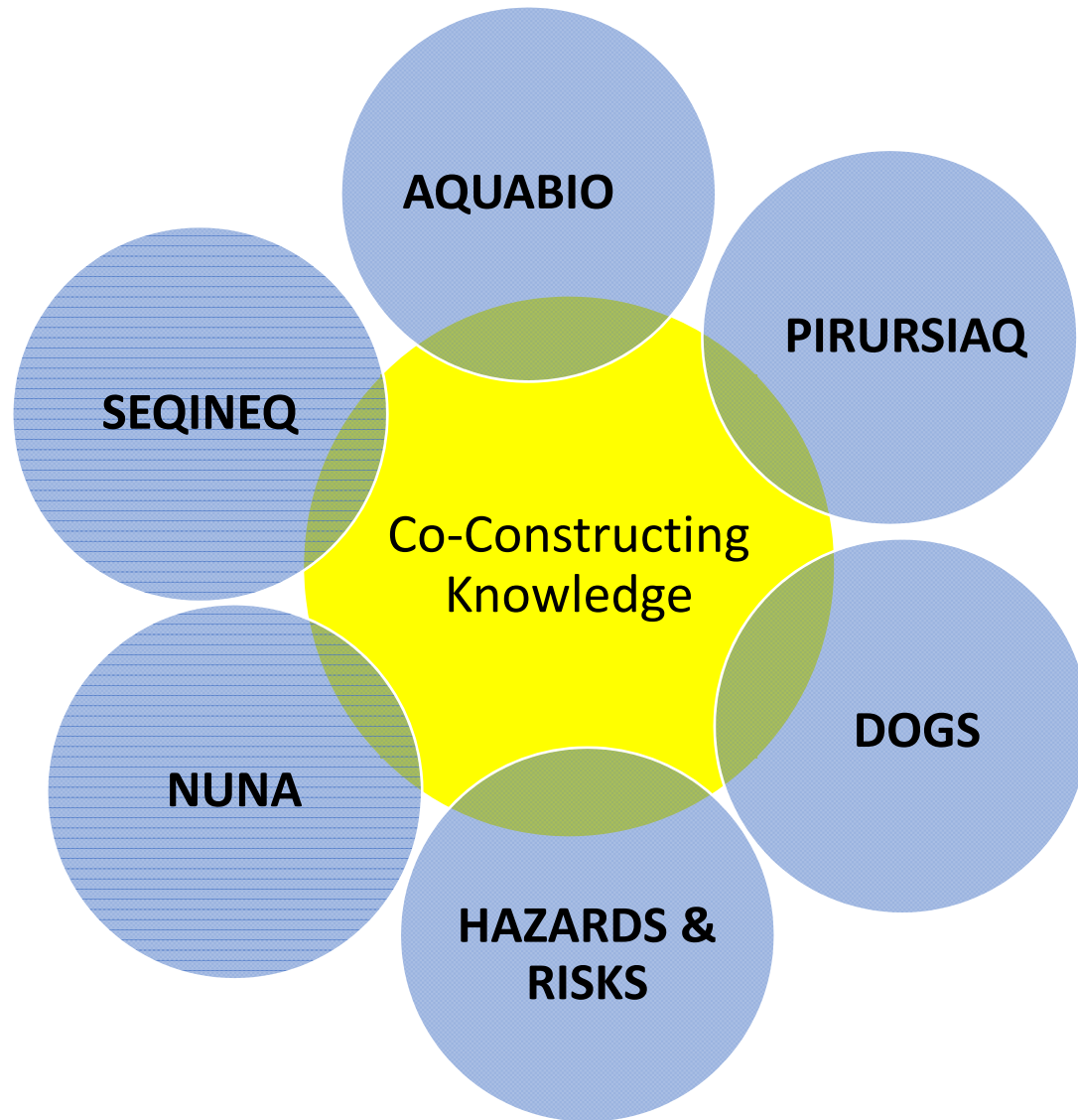
OHMi NUNAVIK - Project locations



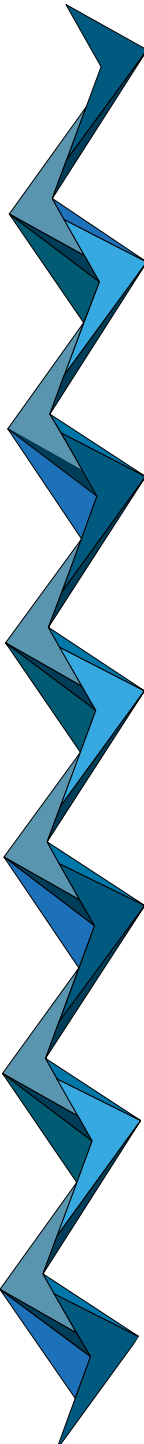
Color of arrow indicates the initial year of project



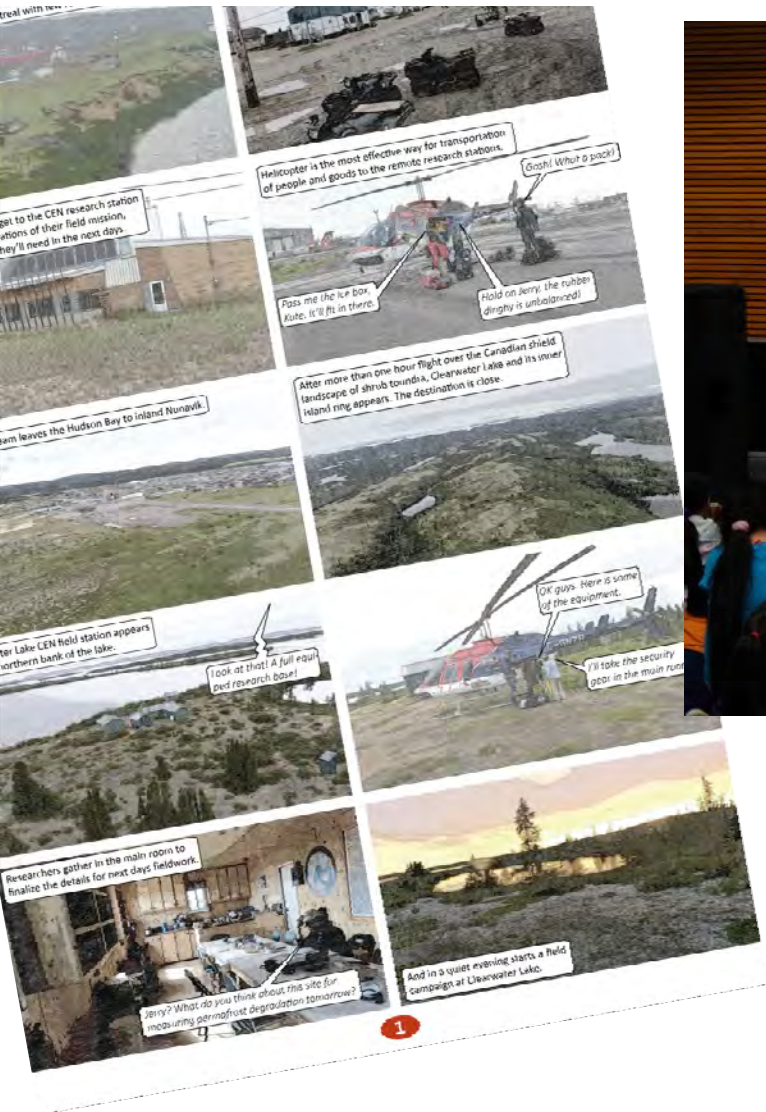
6 complementary projects funded in 2017



**Addressing
community
concerns**



Constructing and sharing with communities



- Makivik magazine;
- Air Inuit magazine;
- Other local media...

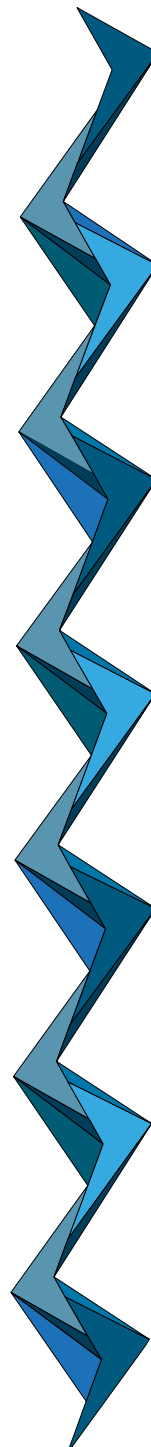


Towards the set up of interdisciplinarity

Best example => AQUABIO (River health)



- Testing water quality
- Training youth
- Learning from elders



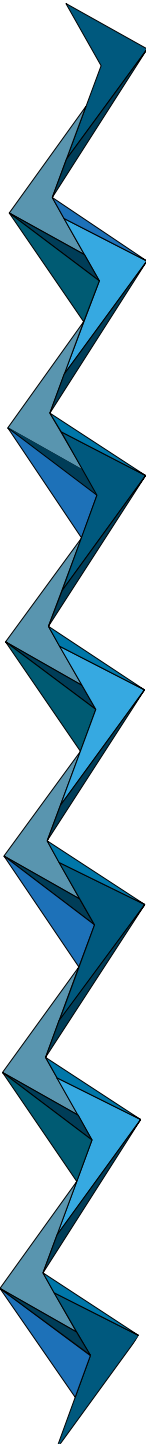
Towards the set up of interdisciplinarity

Best example => AQUABIO (River health)



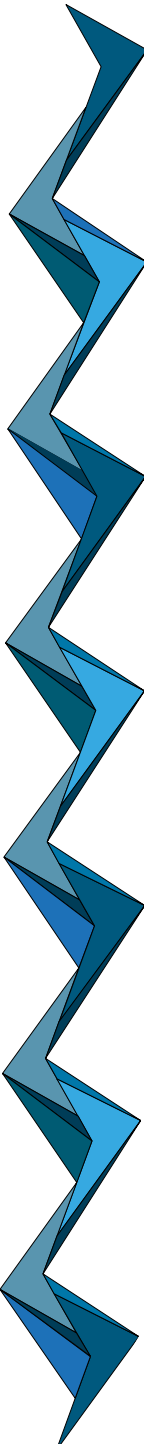
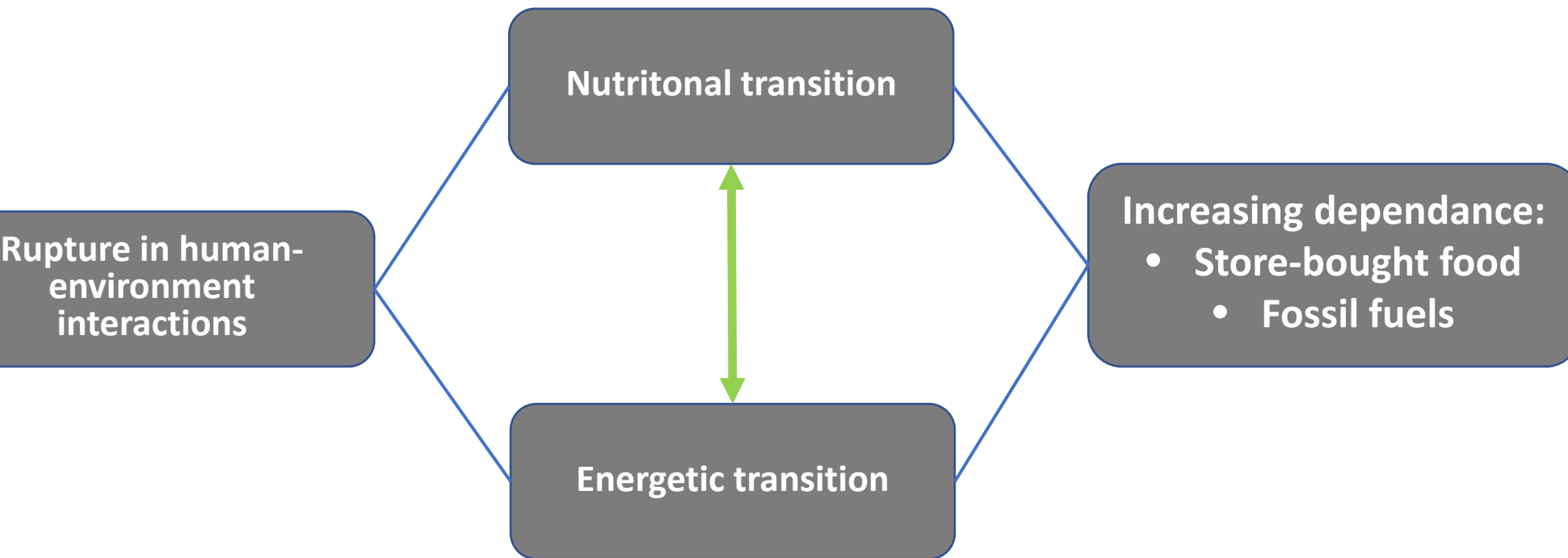
Mean values for all stations:

- Neutral pH (7.05 ± 0.33)
- Very low hardness (4.1 ± 0.6 mg CaCO₃/L)
- Low levels of nutrients (Total N 0.12 ± 0.02 mg/L, Total P 0.01 ± 0.007 mg/L)
- Dissolved concentration of 35 metals (rare earth elements) below Canadian guidelines (CCME, 1999).
- Dominance of *Ephemeroptera*, *Plecoptera* and *Trichoptera* macroinvertebrates: indicators of very fresh, clean water.
- Interpretation of laboratory analyses currently underway.



Towards the set up of interdisciplinarity

second example => PIRURSIQAQ \ SEQINEQ



Towards the set up of interdisciplinarity

second example => PIRURSIQAQ \ SEQINEQ

Food insecurity

- inadequate availability and access to healthy food
- insufficient nutritional quality
- lack of cultural acceptability

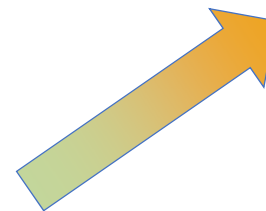
62% food insecurity in the Canadian arctic



Nunavik (Photo: Google map)

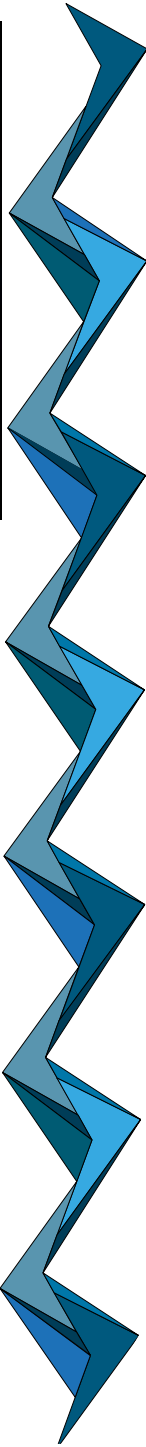
Energy insecurity

- islands not on the energy grid (electricity or gas)
- very cold climate
- totally dependant on fossils fuels



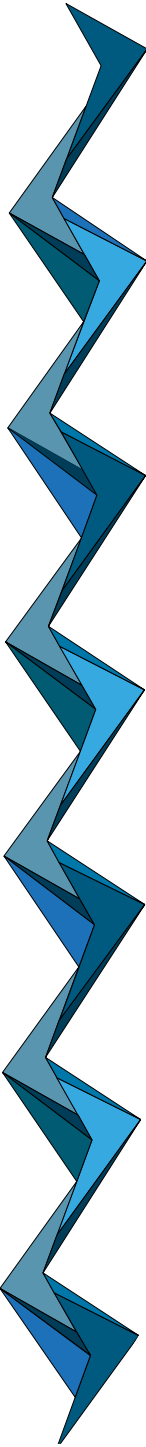
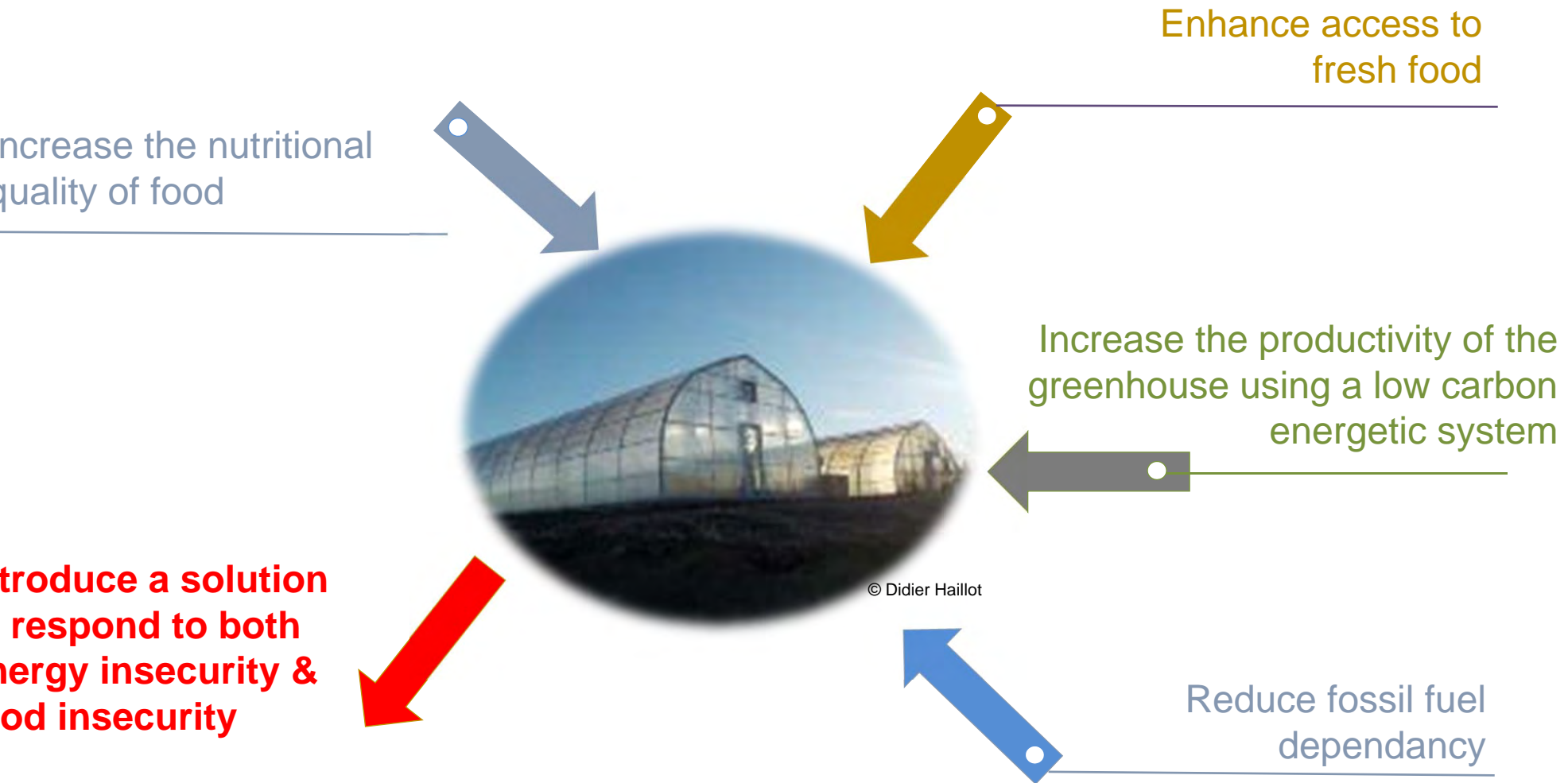
Increase in population => energy consumption 23% increase every ten years¹

Hydroquébec, 2013. Plan d'approvisionnement 2014-2013 des réseaux autonomes demande R-3864-2013.



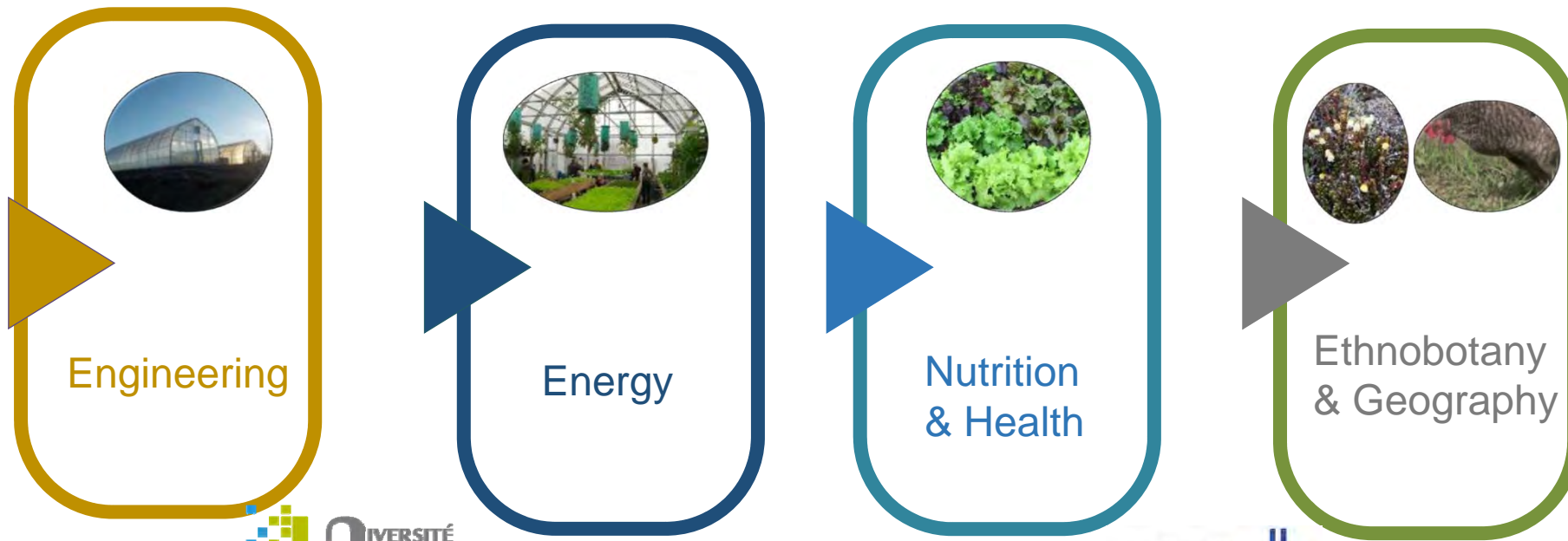
Towards the set up of interdisciplinarity

second example => PIRURSIQAQ \ SEQINEQ



Towards the set up of interdisciplinarity

second example => PIRURSIAQ \ SEQINEQ



UNIVERSITÉ DE PAU ET DES PAYS DE L'ADOUR
ÉTS Le génie pour l'industrie
PROMES

SEQINEQ=>OHMI 2016/17

Université de Montréal
UMR 5175 CENTRE D'ÉCOLOGIE FONCTIONNELLE & ÉVOLUTIVE
INRA SCIENCE & IMPACT

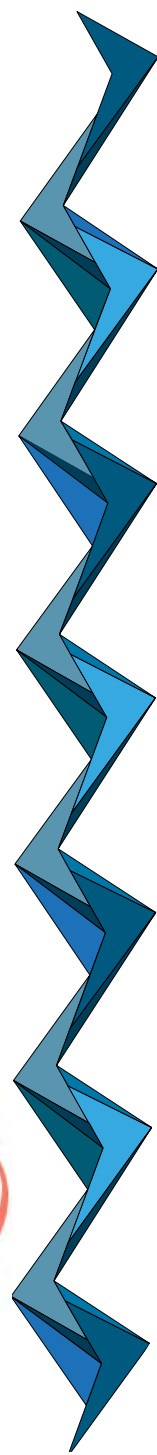
PIRUSIAQ=>OHMI 2015/16/17

2016-2018
CONSEIL FRANCO-QUÉBÉCOIS de Coopération Universitaire

ibEx
RIIHM



5th Symposium Labex DRIIHM 9, 10 et 11 may 2017, Aveiro



Towards the set up of interdisciplinarity

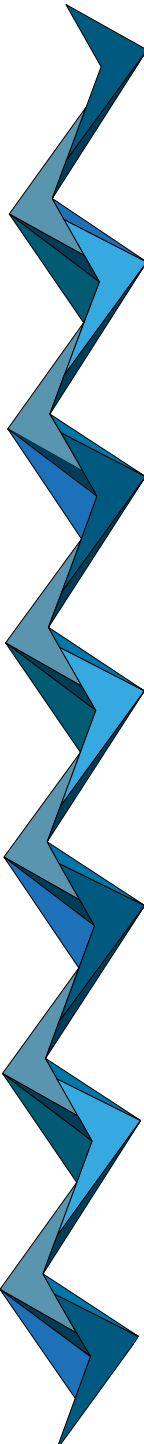
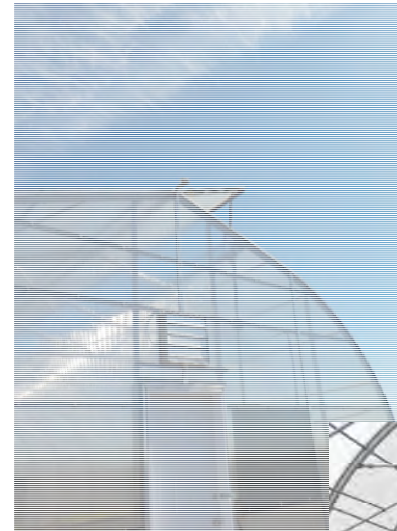
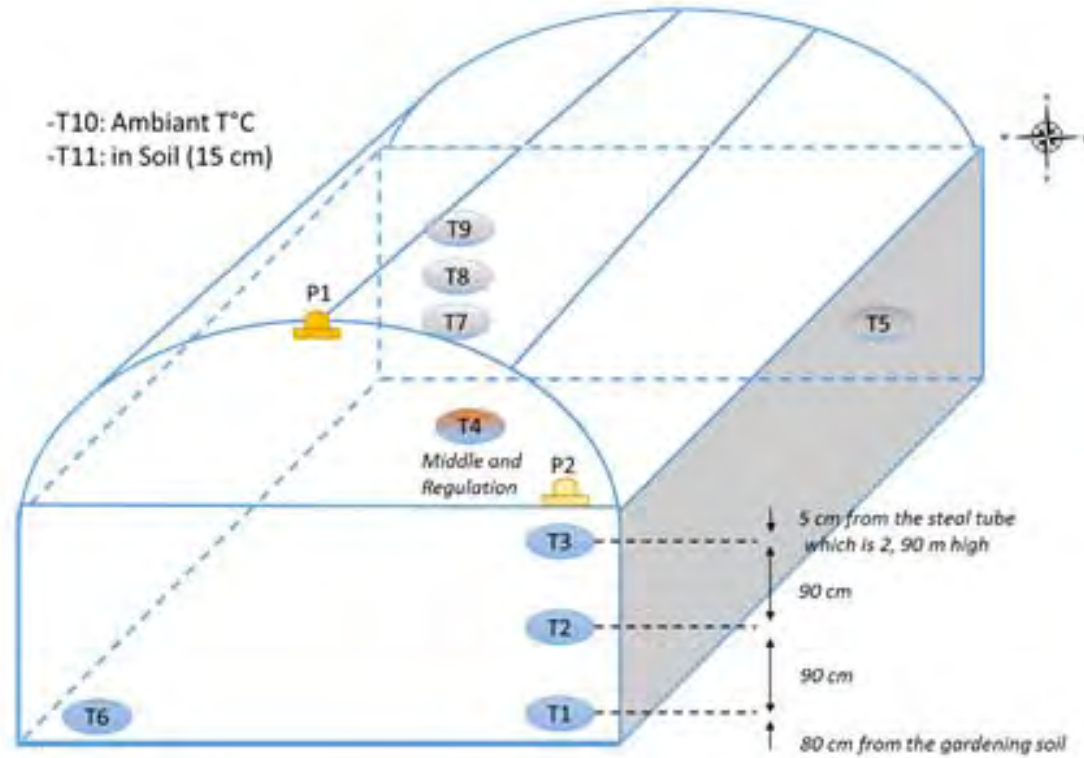
Second example => PIRURSIAQ \ SEQINEQ

SEQINEQ=>

lengthen the growing season;

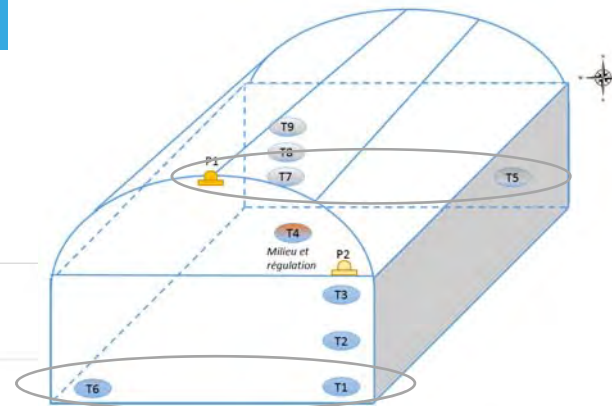
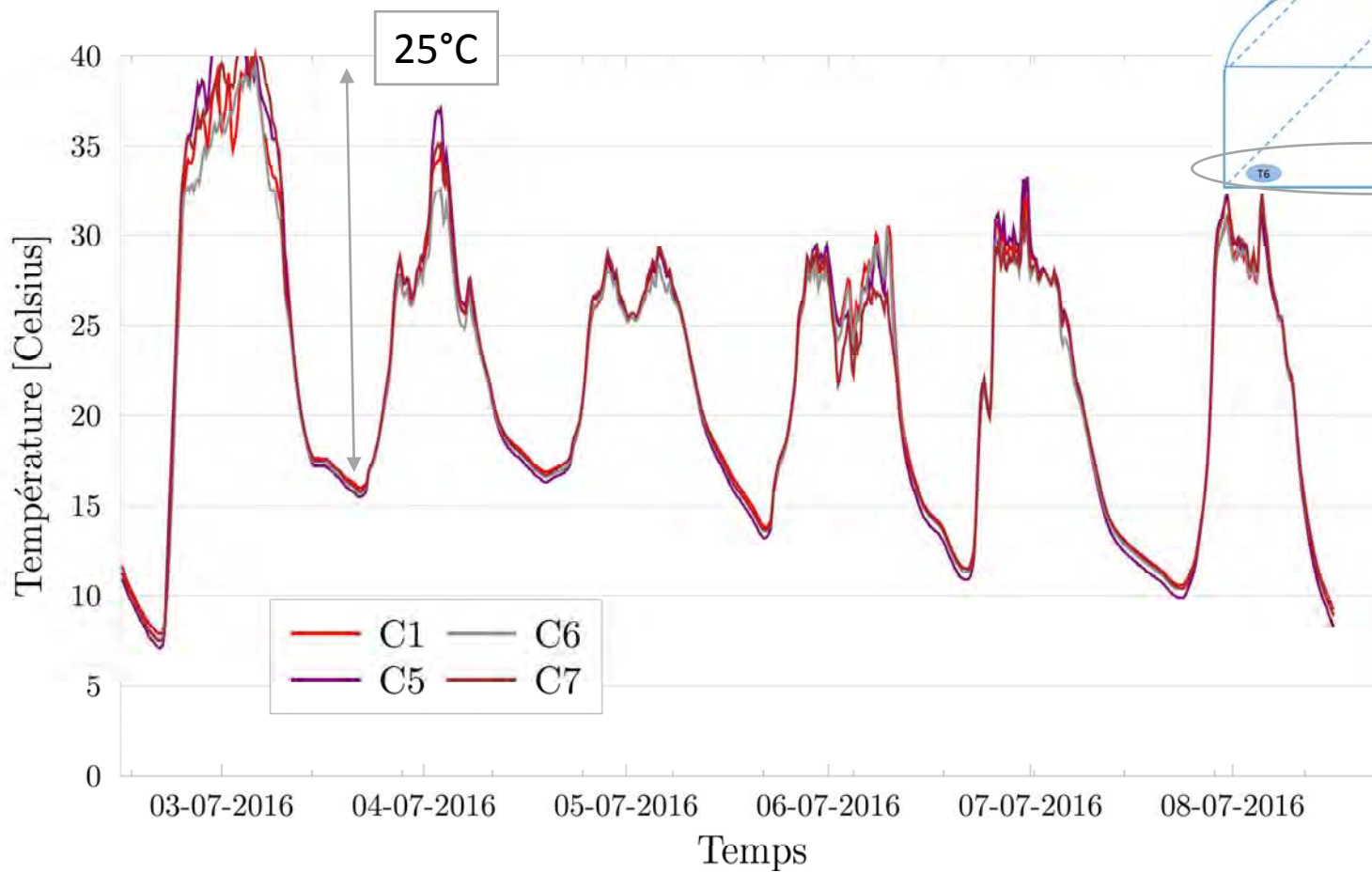
Regulate the temperature...

Without lamps and/or fossil fuel heating systems



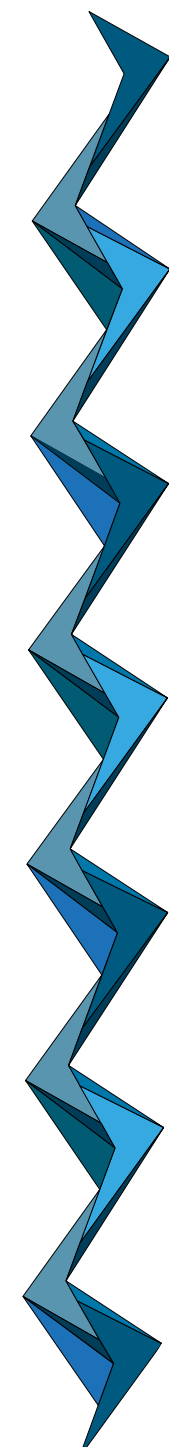
ward the set up of interdisciplinarity

ond example => PIRURSIAQ \ SEQINEQ



Big temperature differences (day/night)

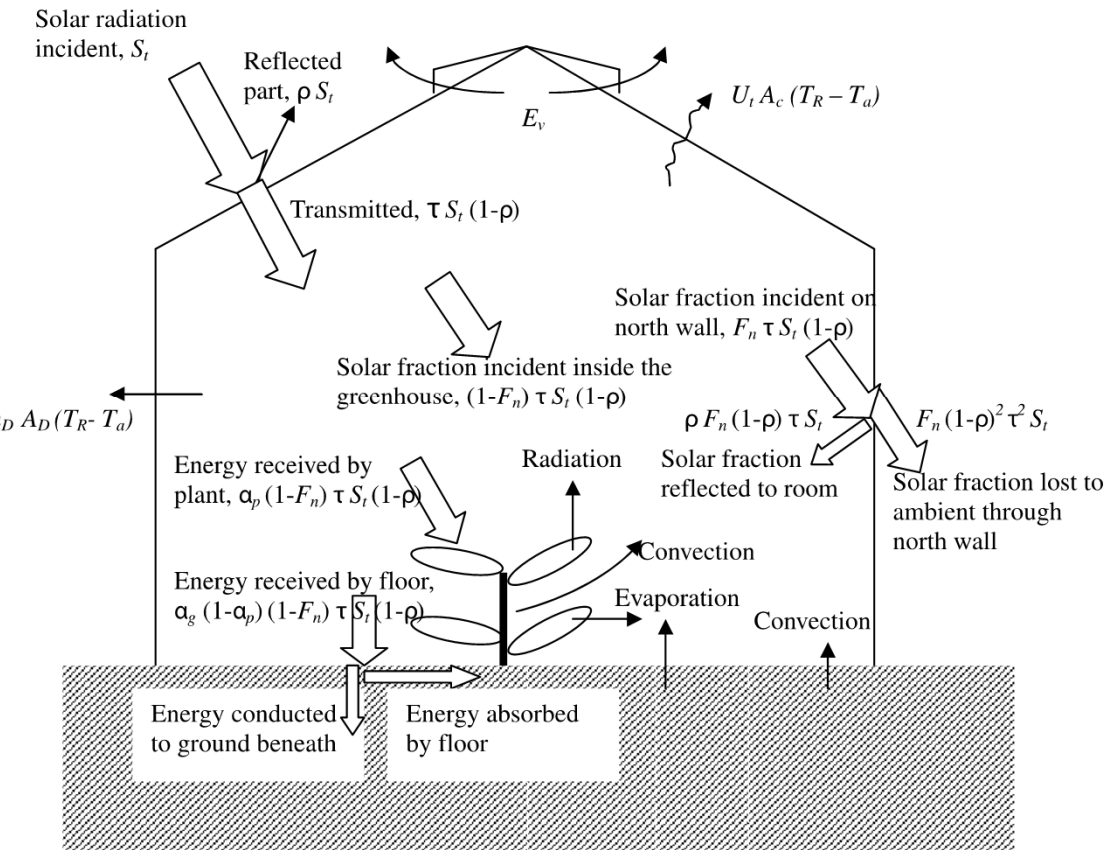
↗ Inertia=>TES



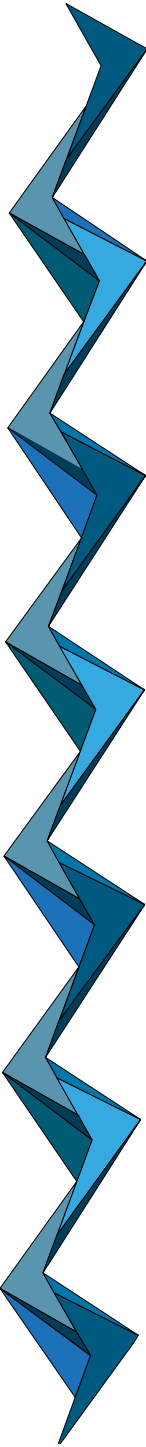
Towards the set up of interdisciplinarity

2nd example => PIRURSIAQ \ SEQINEQ

V.P. Sethi / Solar Energy 83 (2009) 21–38

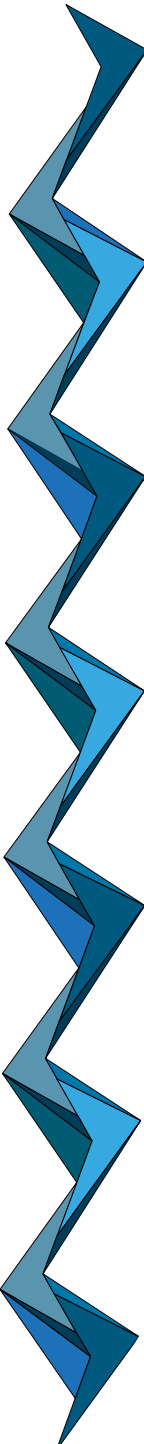
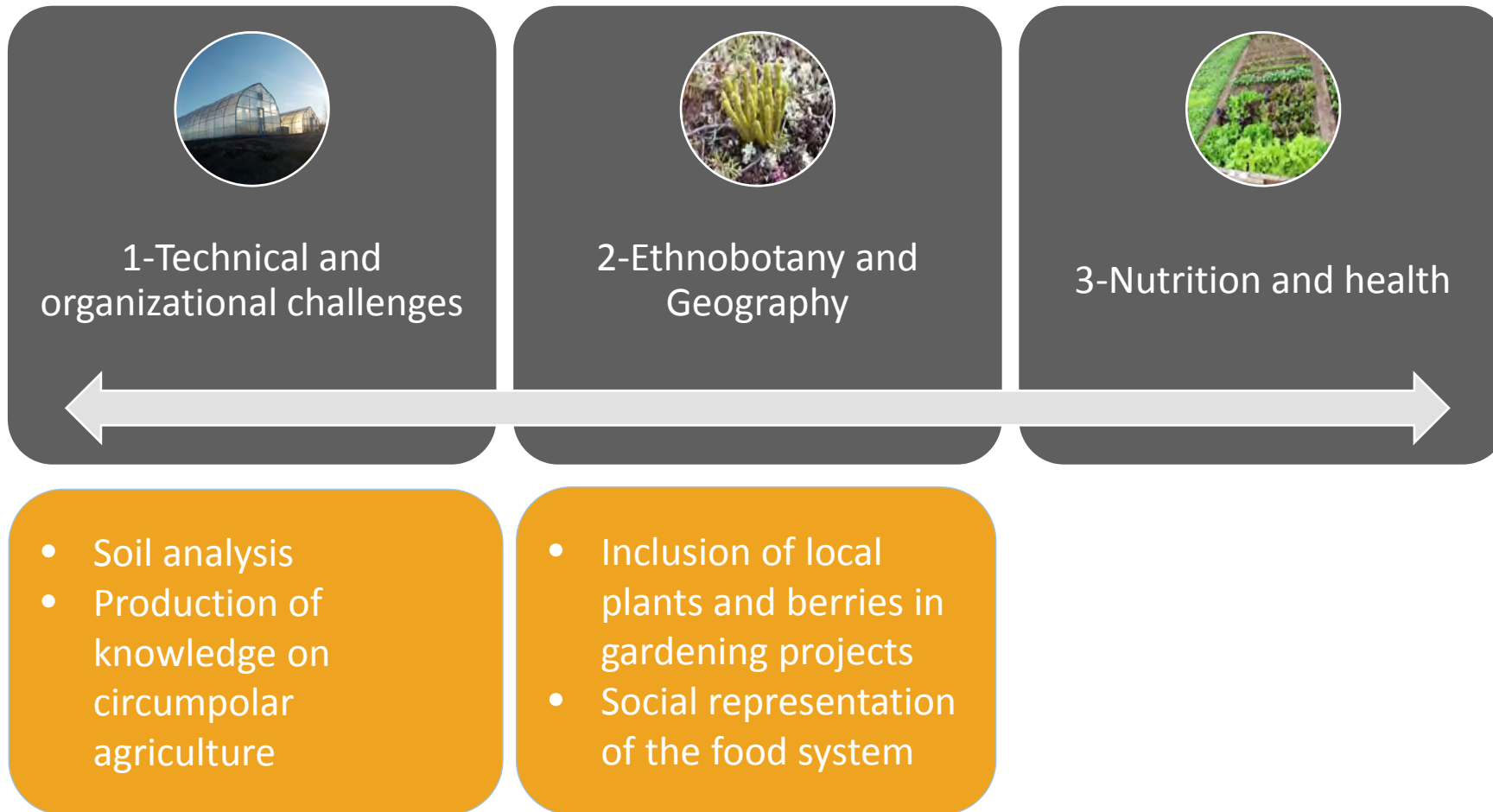


- Develop a complex numerical model
- Create open source model for knowledge transfer
- A PhD student will join & reinforce the team in 2017
- Strong collaboration with PIRURSIAQ project



Towards the set up of interdisciplinarity

second example => PIRURSIQAQ \ SEQINEQ



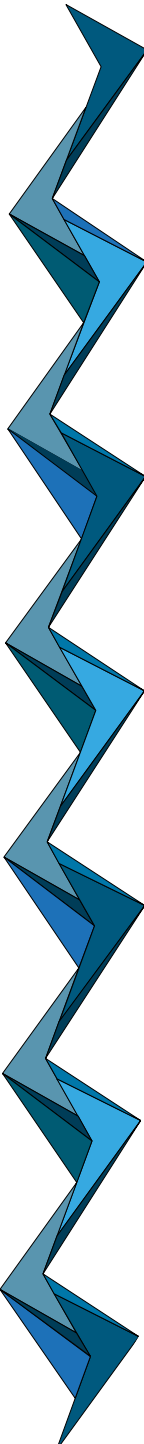
Towards the set up of interdisciplinarity

second example => PIRURSIQAQ \ SEQINEQ

Representation
of the food
system

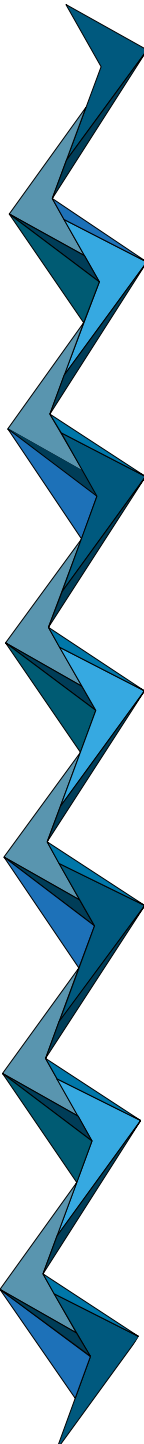
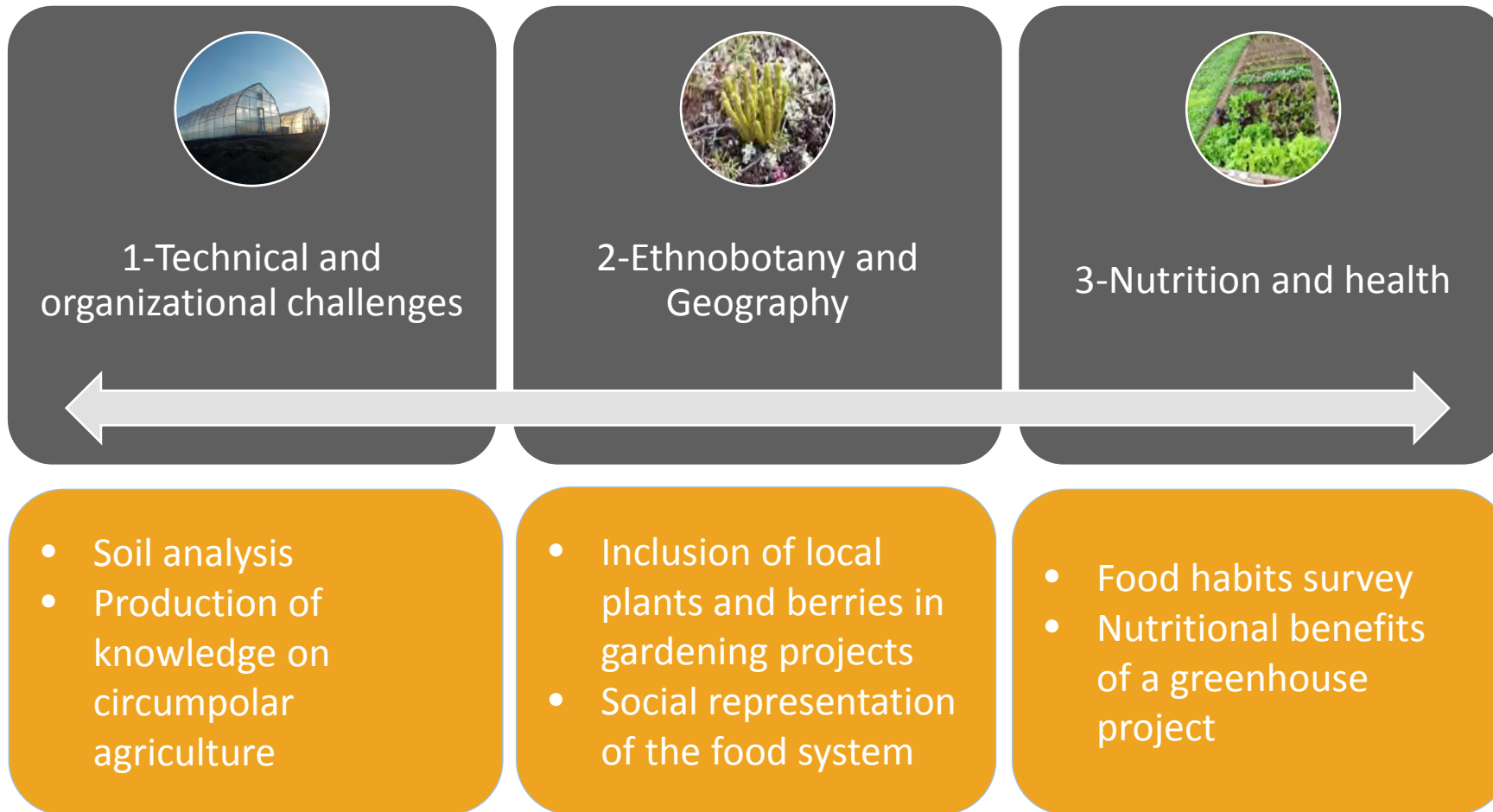
Supply
strategies

Knowledge on
the different
types of food



Towards the set up of interdisciplinarity

second example => PIRURSIAQ \ SEQINEQ



Towards the set up of interdisciplinarity

second example => PIRURSIQAQ \ SEQINEQ

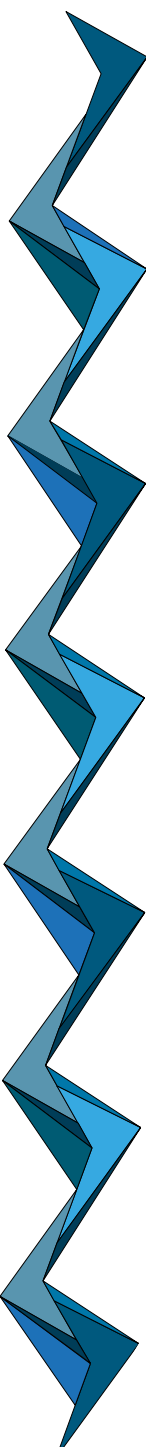
Mineral and vitamin intake of 2016 crops

	Magnésium (mg)	Manganèse (mg)	Potassium (mg)	B-Carotène (µg)
Quantité consommée	32579	270,5	445153	1235753
Quantité recommandée	360-420 (390)	1-2,5 (1,75)	2400-3000 (2700)	-
Nombre de jours couverts	84j	154j	165j	?

	Vitamine C (mg)	Vitamine K	Vitamine B3 (niacine) (mg)	Vitamine B9 (µg)
Quantité consommée	31841,5	88267	442,3	41429
Quantité recommandée	110	45	11-14 (12,5)	300-330 (315)
Nombre de jours couverts	290j	1962j	35j	131j

Bilan des récoltes 2016 « Sharing group »

	Orientaux 26,298 kg		Concombre 9,045 kg
	Herbes aromatiques 3,295 kg		Aragula 3,94 kg
	Fraises 4,38 kg		Pois 2,419 kg
	Epinards 0,882 kg		Haricot 4,499 kg
	Radicchio 1,089 kg		Zucchini 10,66 kg
	Daikon 4,073 kg		Bette à carde 8,4 kg
	Betterave 1,345 kg		Échalote 3,752 kg
	Carotte 1,497 kg		Rabiole 3,83 kg
	Radis 4,787 kg		Kale 19,393 kg
	Chou rave 16,825 kg		Laitue 15,865 kg
	Pommes de terre 2,048 kg		



Conclusion

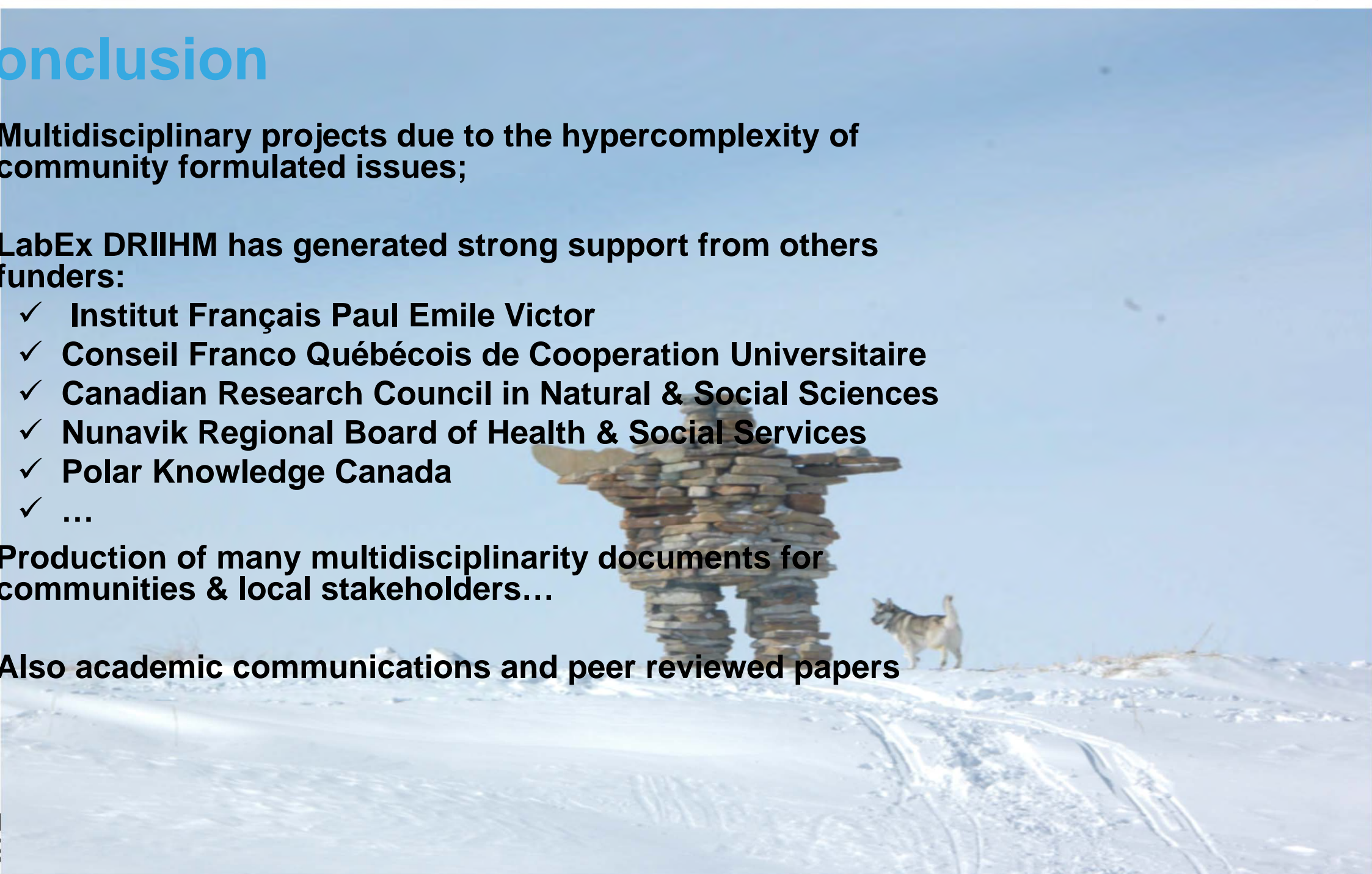
Multidisciplinary projects due to the hypercomplexity of community formulated issues;

LabEx DRIIHM has generated strong support from others funders:

- ✓ **Institut Français Paul Emile Victor**
- ✓ **Conseil Franco Québécois de Cooperation Universitaire**
- ✓ **Canadian Research Council in Natural & Social Sciences**
- ✓ **Nunavik Regional Board of Health & Social Services**
- ✓ **Polar Knowledge Canada**
- ✓ **...**

Production of many multidisciplinary documents for communities & local stakeholders...

Also academic communications and peer reviewed papers



Conclusion



Interdisciplinarity : a work in progress...

