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# Assessing sustainability and adaptive capacity in Arctic tourism

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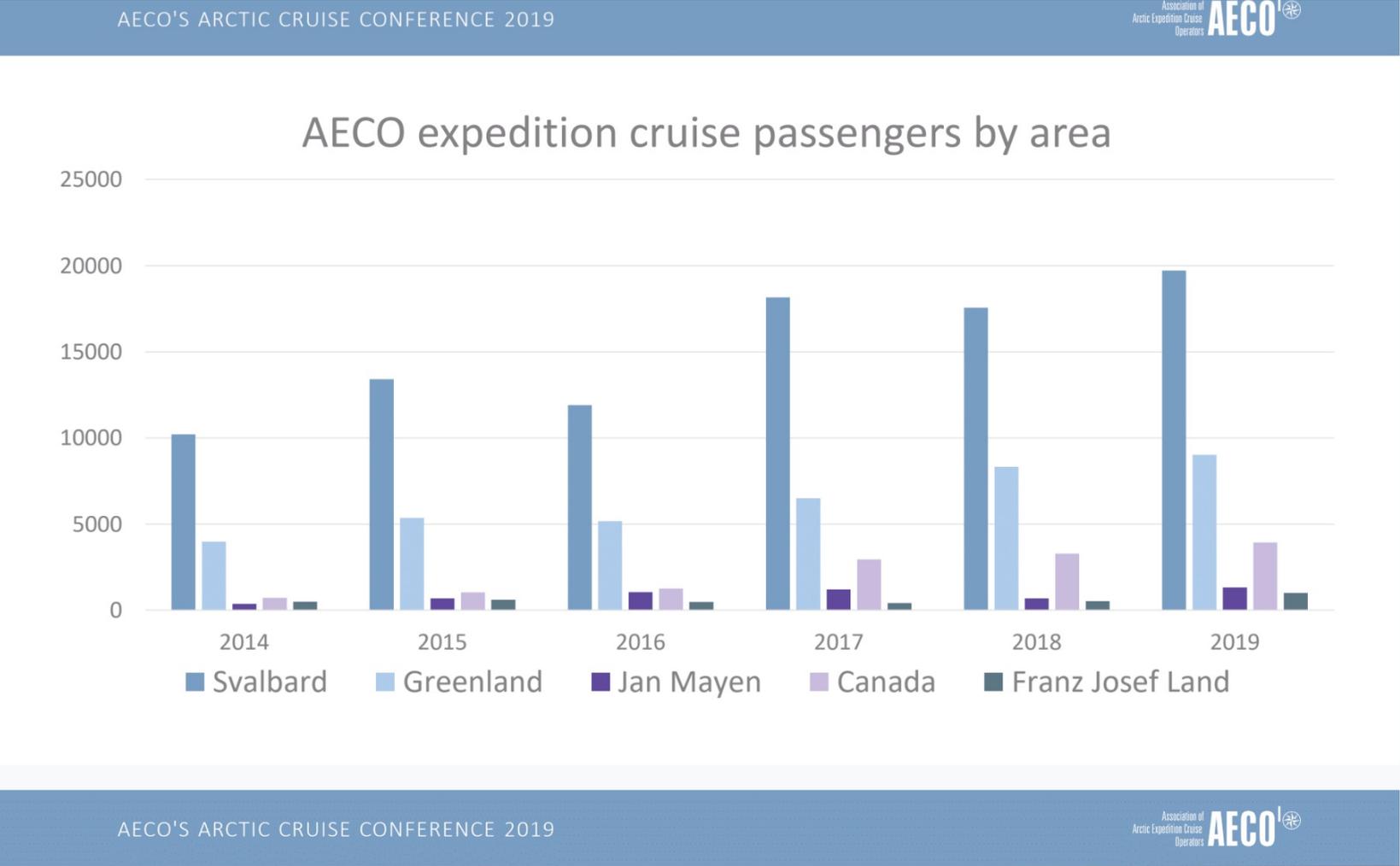
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## Recent trends in Arctic tourism

- Arctic tourism is increasing as a response to demand
- Shrinking sea ice enables maritime traffic in new places
- Highest growth in smaller «expedition» cruise tourism vessels (<500 pax).
- Tourism one of the greatest driver of change in Arctic communities, Longyearbyen, Svalbard had close to 50.000 visitors on cruise ships in 2018, Greenland has similar numbers.
  - ▶ In Svalbard – policy change is the main determinant of recent development.
- With the pandemic the industry is fighting for survival.



# Growth in small vessel cruise tourism in the Arctic (<500 pax)



AECO, 2019

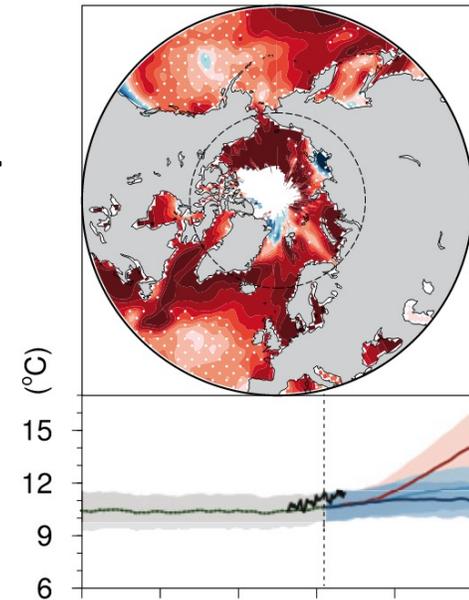
# Climate, ecosystem changes in the Arctic with impact on tourism

- **Reduced sea ice has enabled a new tourism products (cruises with small vessels at new places).**
  - ▶ Ice free Barents sea by 2060 (Onarheim and Årthun, 2017)
- **»Atlantification» of the climate (in Svalbard) (Hanssen-Bauer 2019) increases natural hazard risks.**
- **Tourism could also be an additional driver of stress to SESs in the context of rapid change.**
  - ▶ Particular marine mammals and sea birds
  - ▶ Introduction of alien species (Øian and Kaltenborn 2020)



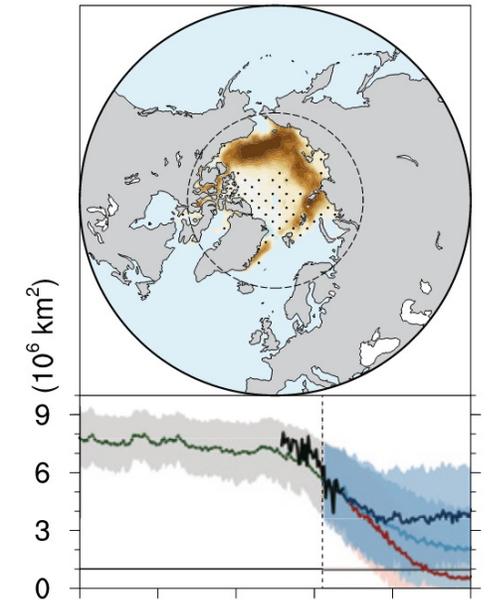
Photo: Governor of Svalbard

(c) September SST trend Arctic



Sea surface temperature (SST) trend (units: °C per decade)  
-0.35 -0.3 -0.25 -0.2 -0.15 -0.1 -0.05 0 0.05 0.1 0.15 0.2 0.25 0.3 0.4 0.5

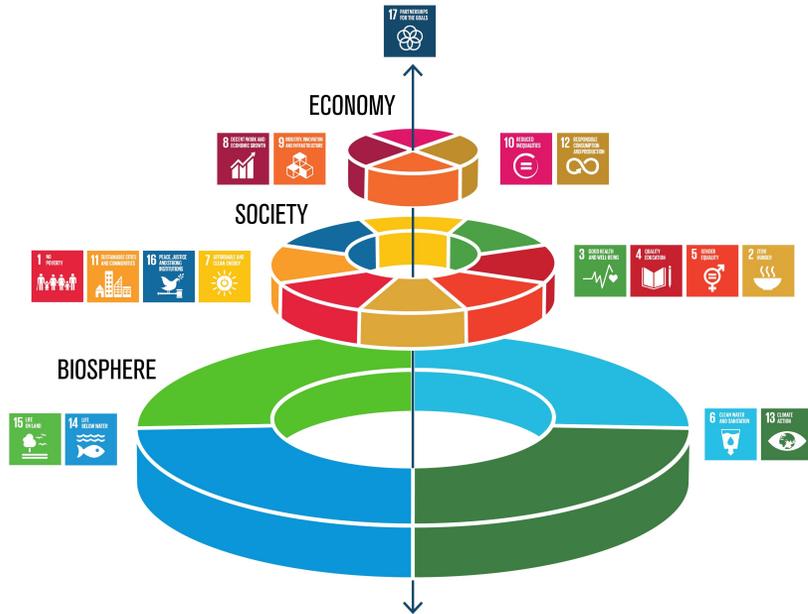
(d) September sea ice trend Arctic



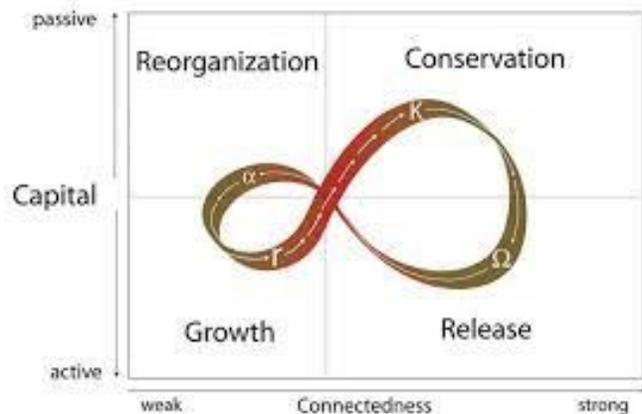
Sea ice concentration trend (units: °C per decade)  
-28 -24 -20 -17 -14 -11 -9 -7 -5 -3 -1 0 1 3 5 7 9 11 13 15 17 19 21

IPCC, 2019

# Sustainability, resilience and adaptive capacity



Graphics by Birker Lakemal/Birker



- **What is a sustainable tourism system?**

- ▶ «the process which aligns the needs of the tourists, the tourist businesses, the local host community and the need for environmental protection» (Choi and Turk, 2011) ?
- ▶ Need to set a limit to growth in tourism – recognizing thresholds in the coupled-socio-ecological system (SES).

- **Do resilience align with sustainability?**

- ▶ Not necessarily!
- ▶ But still treated as interchangeable objectives in tourism literature (e.g. Lew 2014)

- **Critique of the resilience concept**

- ▶ “preference of status quo”
- ▶ resilience represent a type of *governmentality* that embeds neo liberalism (Joseph 2013).

- **Sustainability in a tourism system requires resilience (Espiner et al. 2017).**

- ▶ Resilience as a subset of sustainability
- ▶ **Adaptive capacity** as the human agency component of resilience
- ▶ A strengthening of adaptive capacity will contribute to sustainability in tourism systems.
- ▶ Additionally there is a need of tailored sustainability indicators for Arctic tourism, adapted to particular conditions in the Arctic SESs.

# Examples of proxies and determinants for adaptive capacity in tourism

Proxy	Sub-proxy	Reference
<b>Experience with coping or adapting to previous and current challenges related to weather and climate variability</b>	- How did actors cope with the pandemic?	Becken 2013
<b>experience with transformation to shift in market conditions</b>	- How did actors cope with the pandemic?	Becken 2013, Bec et al 2016
<b>Social capital</b> (networks and cooperation)	<ul style="list-style-type: none"> <li>- Collaborations with other companies</li> <li>- Degree of collaboration at destination</li> </ul>	Wyss et al. 2017
<b>Culture &amp; Human capital including: competencies and capacities of staff &amp; owners, Ability for innovation &amp; entrepreneurship</b>	<ul style="list-style-type: none"> <li>- New services, products and markets</li> <li>- Motivation of owner or leader to continued engagement in industry.</li> <li>- Lifestyle choices</li> </ul>	Dannevig et al. 2015 Orchiston et al. 2016,
<b>Technology &amp; infrastructure</b> (that the actor possess)		IPCC 2003, Keskitalo et al. 2013
<b>Financial capital</b>	yearly revenue, ability to raise capital from owners.	IPCC 2003, Keskitalo et al. 2013

## Our research question



***How can arctic tourism be managed in a way that both increases its sustainability and contributes to adaptive capacity in the face of increasing climate risks?***

Horizon 2020

Work programme:

**LC-CLA-07-2019: The changing cryosphere: uncertainties, risks and opportunities**

Subtopic:

**b) Changes in Arctic biodiversity (Research and Innovation Action)**

Coordinator:

**Kai Bischof, University of Bremen, Germany**



14 partners, 8 Nations, 48 months, 6.4 Mio EUR

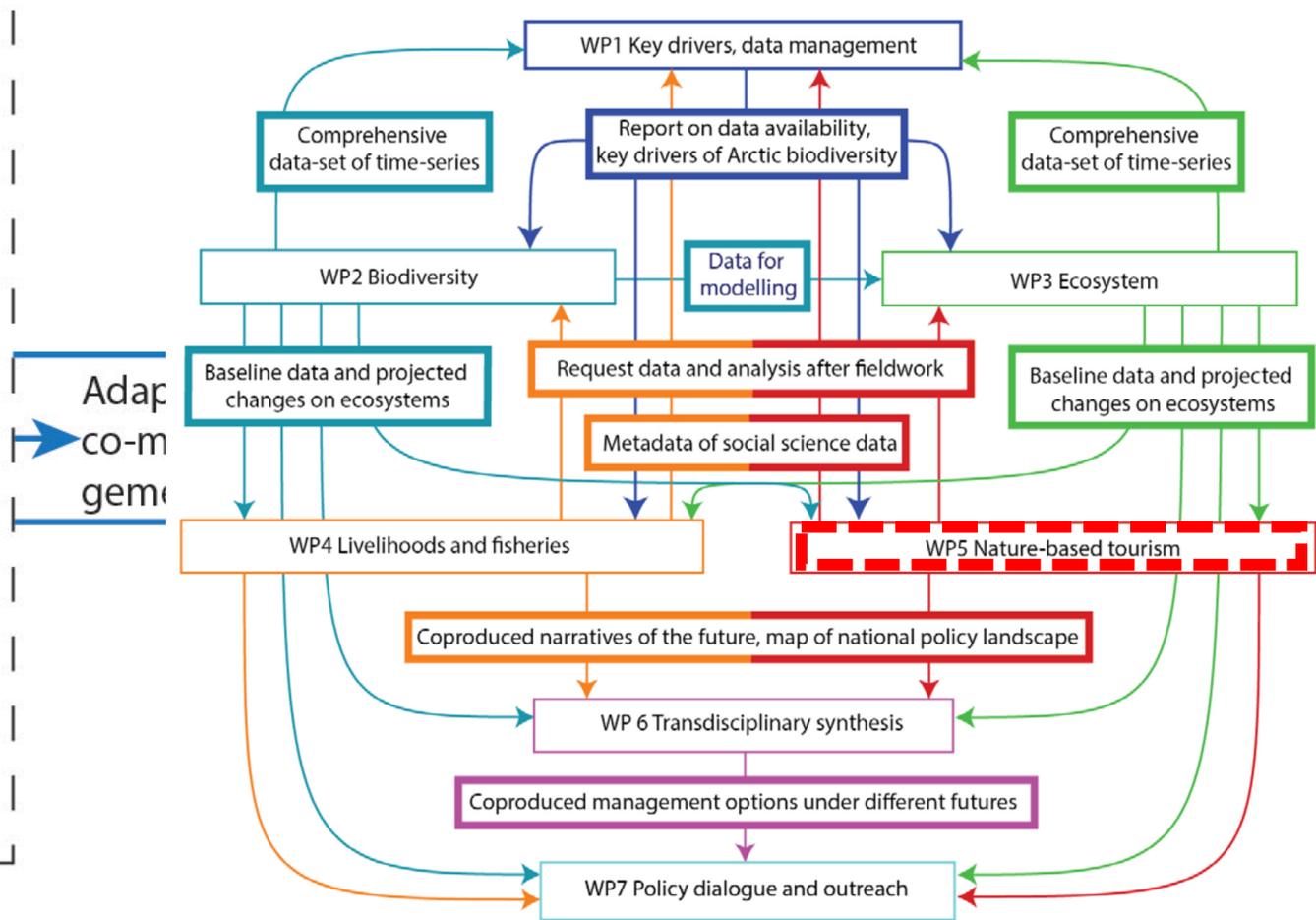
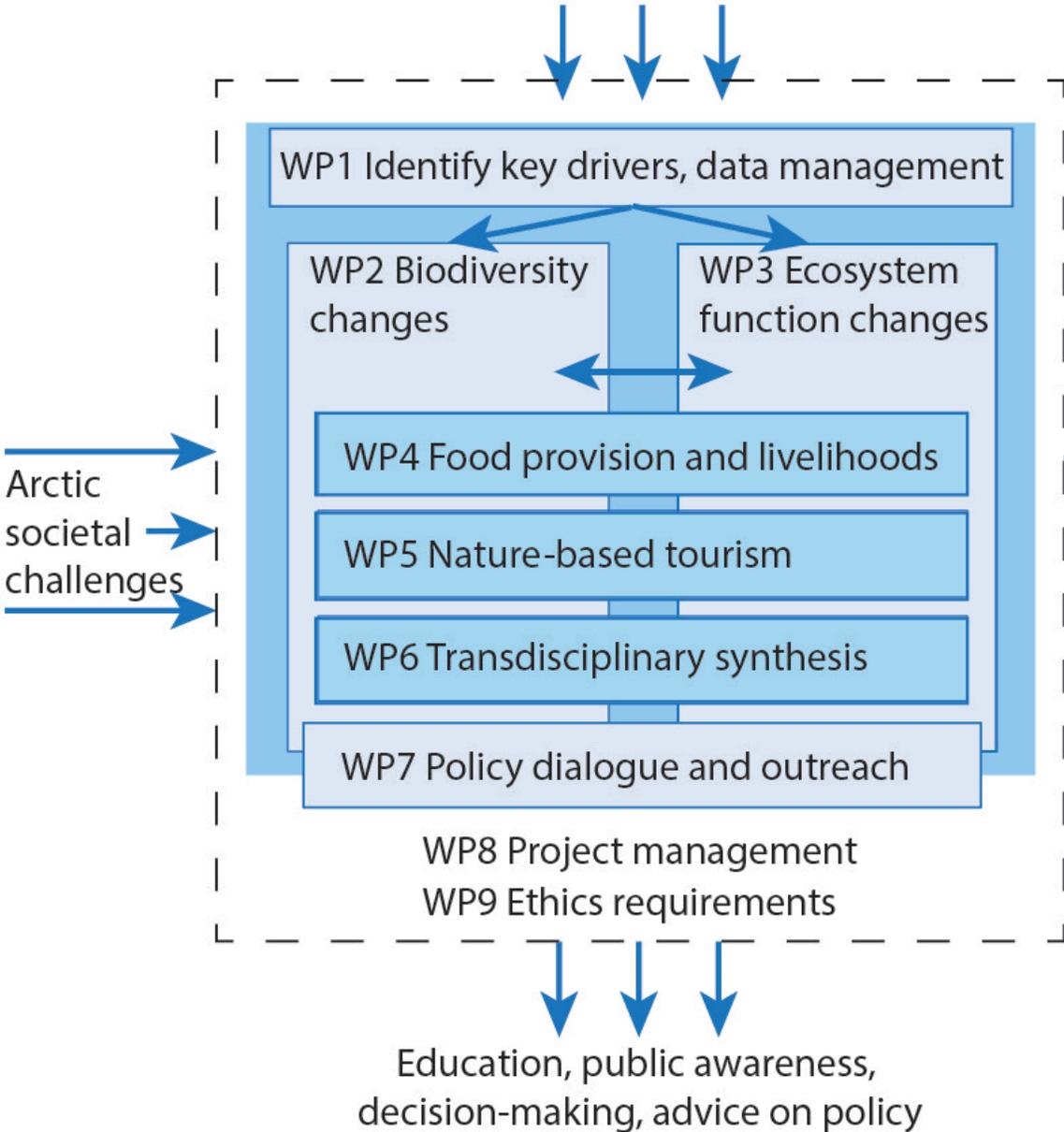
# Objectives of tourism WP

1. develop a framework for assessing local sustainability of tourism activities under climate change.
2. coproduce narrative scenarios of future tourism under climate, cryosphere and biodiversity changes with industry actors in Isfjorden, Svalbard and Disko Bay, Greenland.
3. assess the potential for adaptive co-management of tourism destinations.



Photo: Gary Bremridge

# Arctic ecological challenges



Adapt  
co-m  
gen

# The cases



## Approach

- **Carry out field work with interviews and participatory observation**
- **Provide stakeholders with relevant information on changing conditions (and projections) from WP 2 and 3.**
- **Carry out case-wise scenario workshops with WP 4**
- **Develop indicators for local sustainability of tourism system**
- **Ground-truth assesment of local sustainability of tourism activities with stakeholders**



Photo: Halvor Dannevig

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Thank you!



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