

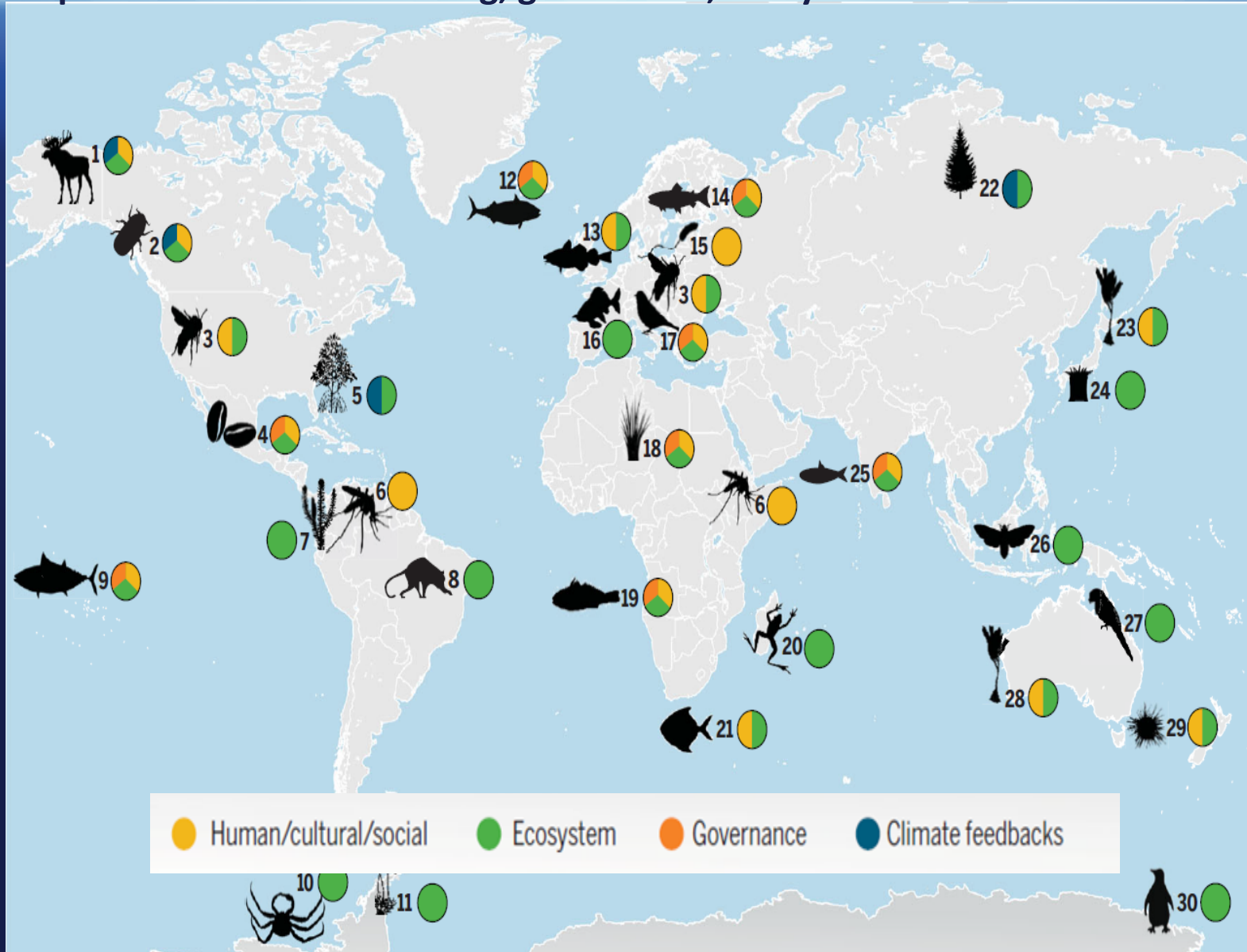
Theory - and international experiences

Collaborative resource management and monitoring

- Why is it important?
- What do we mean with the terms?
- Examples of practice
- Examples of achievements

Climate-driven changes in the distribution of life

Impacts on human well-being, governance, ecosystems and climate feedback



Why is this
important?



Adapting to global species re- distribution requires: **‘All hands on deck’**

Respect, Collaboration, Exchange and Cross-weaving
of indigenous, community-based and
formal academic science

(Science 355:1389; 2017)

Why is this
important?



Adapting requires:

**Decision-making at the most
appropriate level**

Resource management
that promotes local livelihoods within sustainable levels

Collaborative Resource Management

*= Collaborative institutional arrangement
among local communities and other
stakeholders for managing or using resources*

(Environm. Science Policy 4: 229, 2001)



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Justification

Participation → Efficiency and equity
in resource management

Precondition Local people have their rights
recognized to access and use resources



Examples of practice

Public engagement in decision- making



Based on Arnstein 1969

Examples of practice

Canada

Various co-management agreements such as Nunavut Final Agreement
(Armitage et al. 2009; 2011; Dale & Armitage 2010)

Alaska

Co-management advisory committees
(walrus, beluga, bowhead whale, seals, polar bear)

Iceland

River fish management, Arctic tern breeding colonies

Sweden

Water resource management

Examples of practice

International agreements

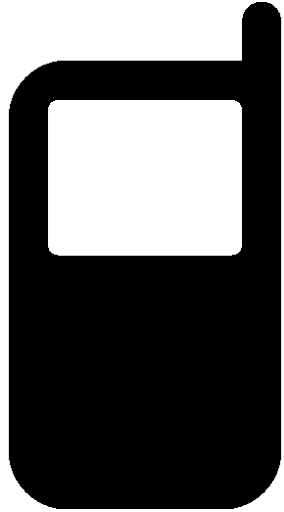
Convention on Biodiversity

By 2020 integrate indigenous and local knowledge and practices into the management of biodiversity

Collaborative monitoring

= *The process of routinely observing the environment that is led and undertaken by community members*





Akunnaaq, early Sep. 2010. By Gerth Nielsen

The kind of skills it takes to be a hunter

Judicial knowledge

(knowing rules, regulations & legislation)

Oceanography – sea currents

(determining where and when to go)

Knowledge about climate change

(adapting to consequences)

Meteorology

(ability to foresee weather changes)

Planning & logistics

(flexibility to adapt to changing conditions
& environment)

Biology

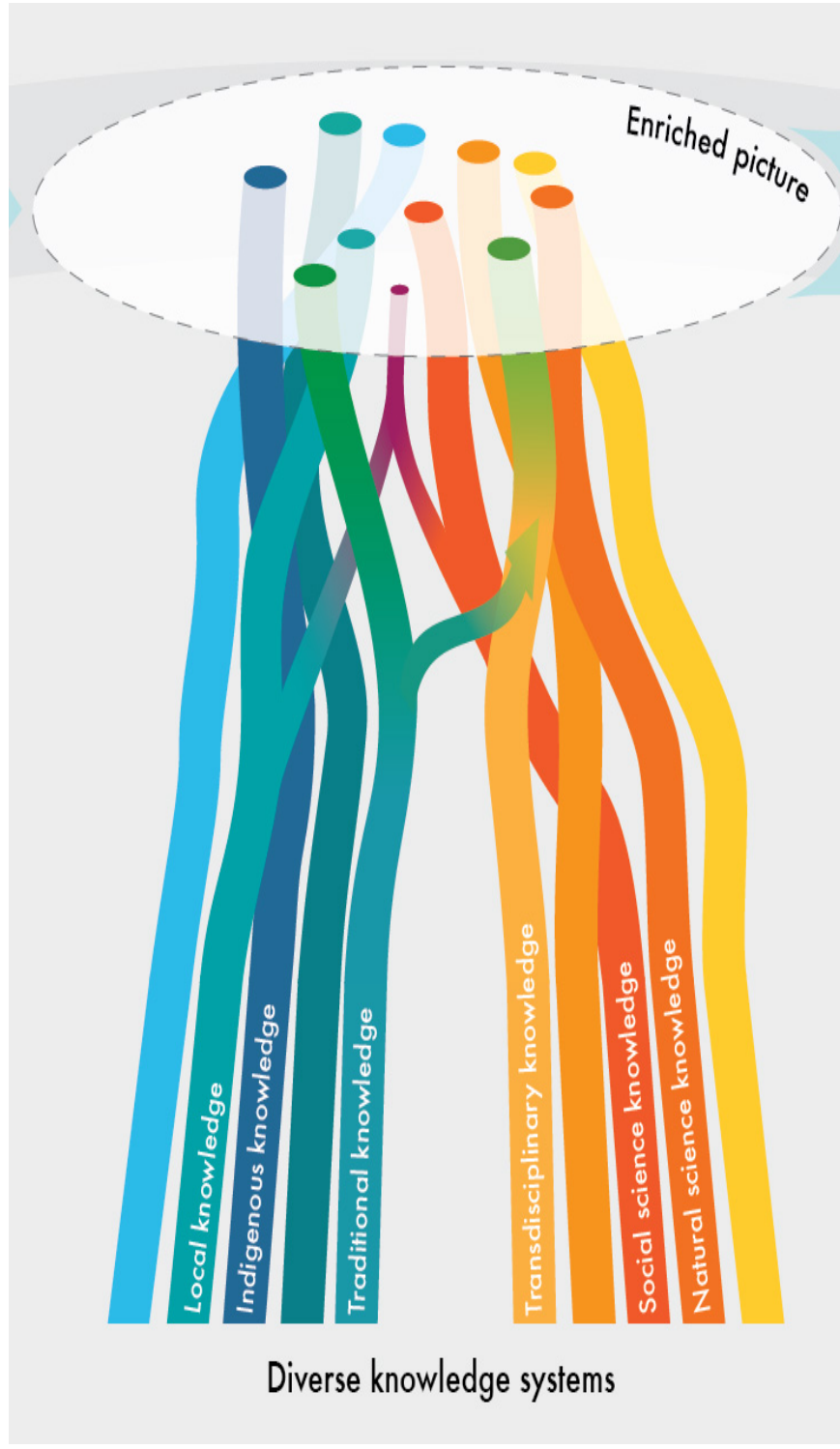
(knowledge of species
and their migration patterns)

Technical skills

(knowing how to maintain
motors and weapons)

Hygiene

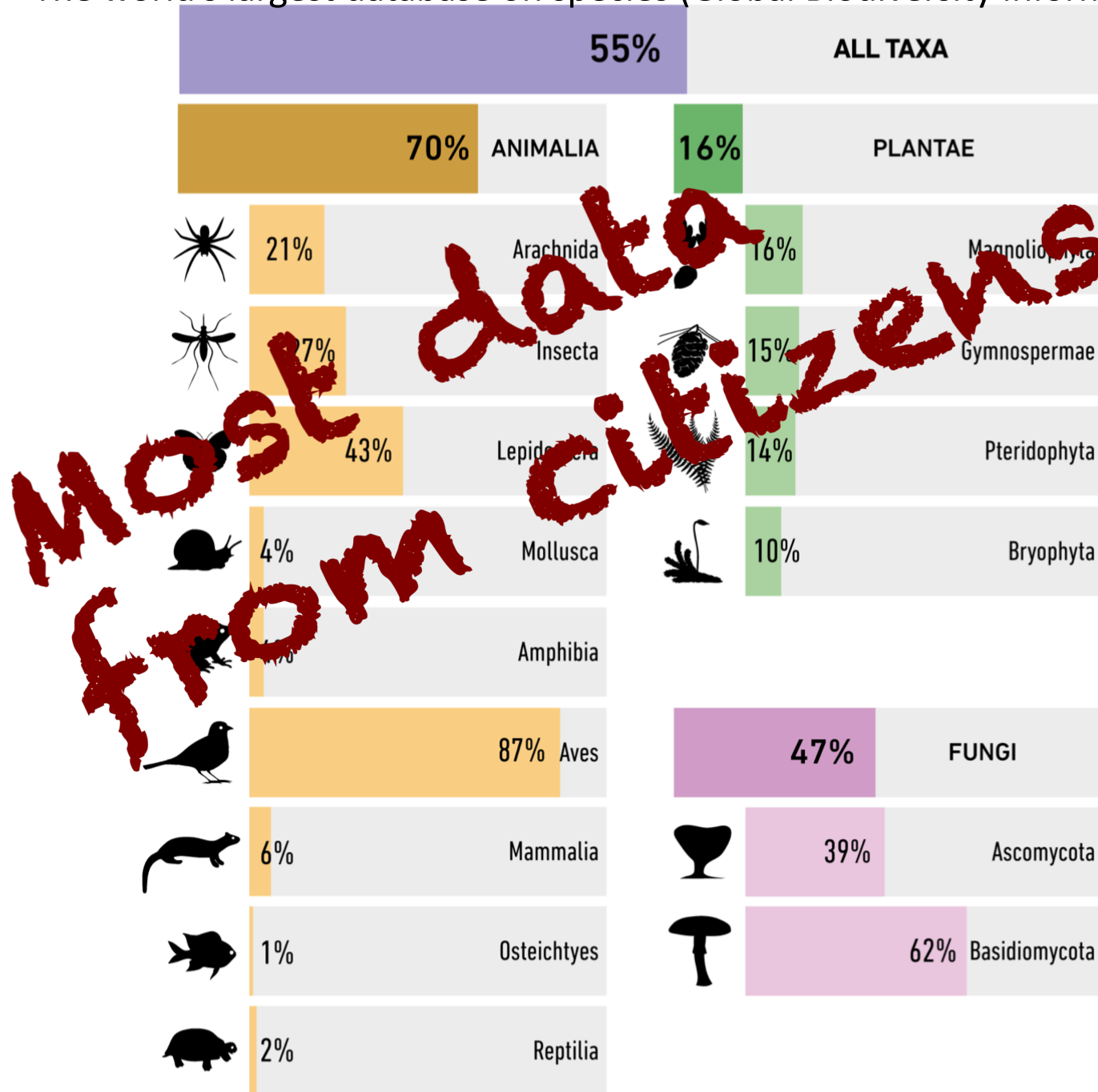
(handling of catch)



Tengö et al. 2014; 2017

How do reports by
community
members compare
with professional
scientists' reports?

The world's largest database on species (Global Biodiversity Information Facility)



Chandler et al. 2016

How to increase the ability of CBM programmes to provide data that trained scientists would consider reliable

1) Use triangulation

- Across communities
- Across community members
- Across methods

2) Increase the no of primary data providers

(= community members who observe resources)

3) Use clear categories

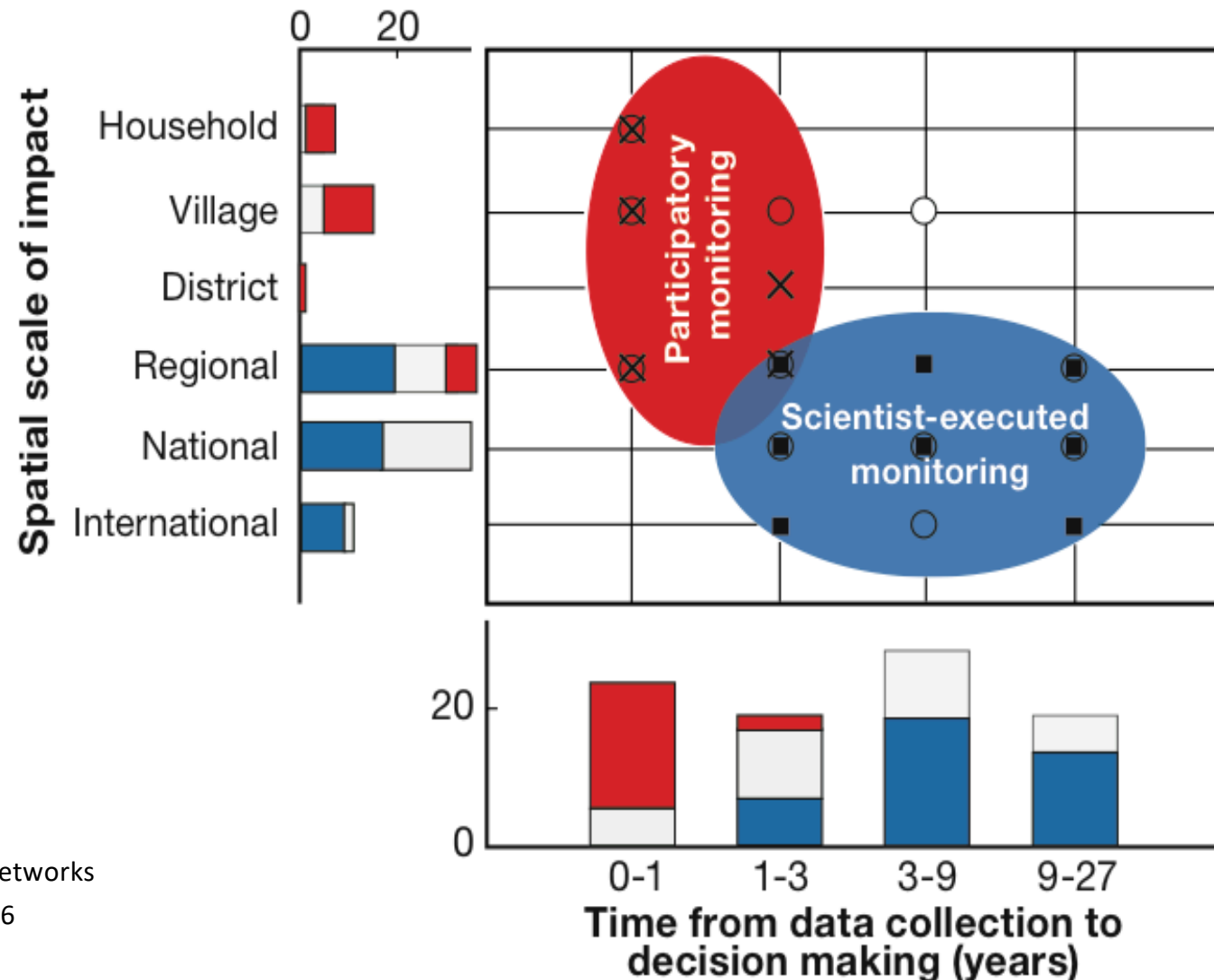
4) Ensure skills in facilitating dialogue

5) Invite scientists to visit CBM programs



Example of achievements

Decision-making from monitoring



$n = 104$ observing networks

J. Appl. Ecol. 47:1166

**Scale of decision-making and
implementation time differ**

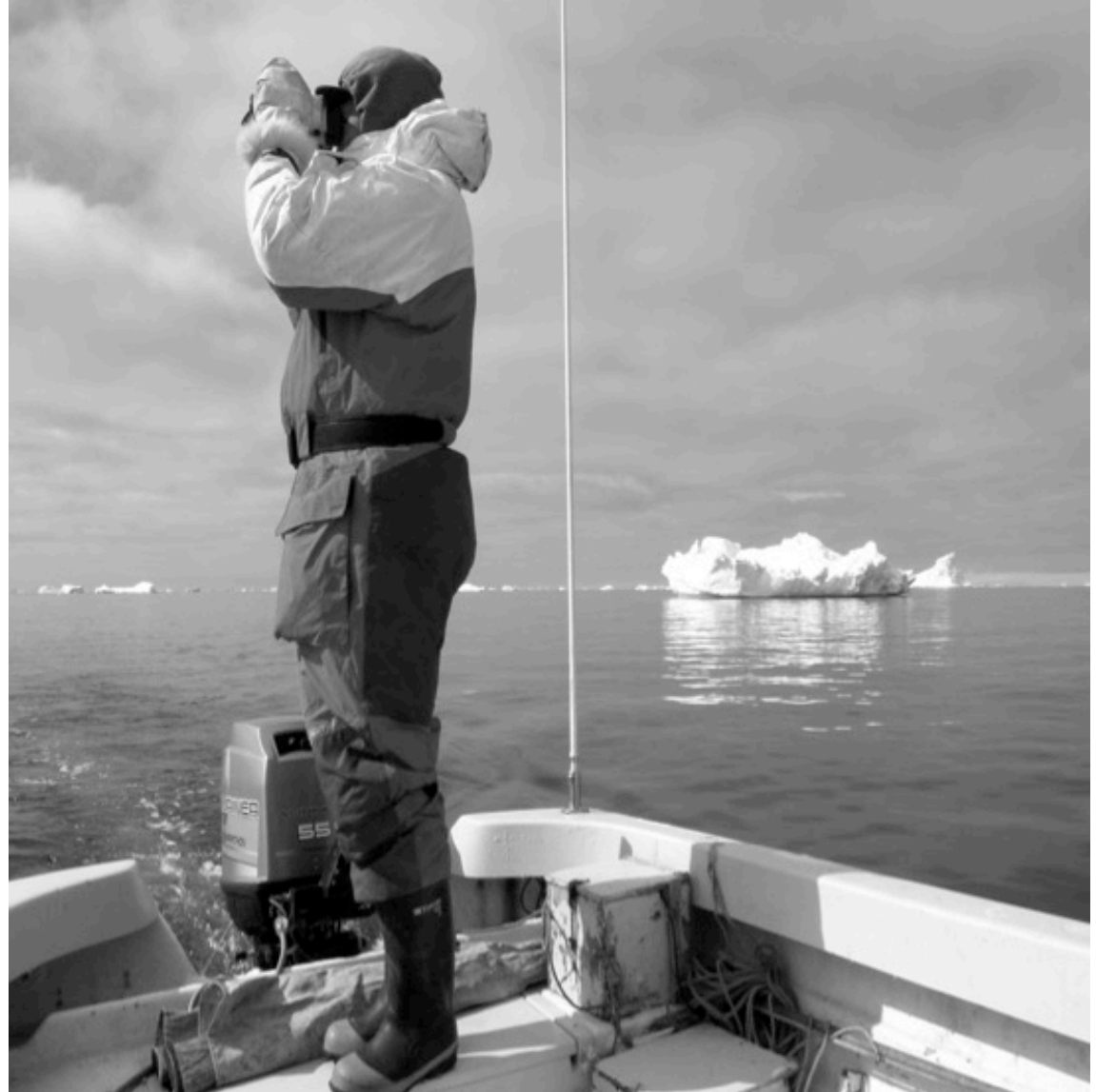
**Without involvement of local people:
the monitoring may sometimes be
isolated, academic exercises
with limited impacts in the 'real' world**

**Collaborative
monitoring can...**

**Document local
resources**

**Encourage local
discussion**

**Shorten the time
from observation to
decision**



Does not replace scientist monitoring

**Helps pinpoint species and areas in
need of attention**

**Present all year
round**

