

Scientific mobilization of keystone actors for biosphere stewardship

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March 15, 2023

VELMU: Bringing marine nature back to our lives – the role of science

Stockholm Resilience Centre
Sustainability Science for Biosphere Stewardship



Stockholm University

Beijer Institute
OF ECOLOGICAL ECONOMICS



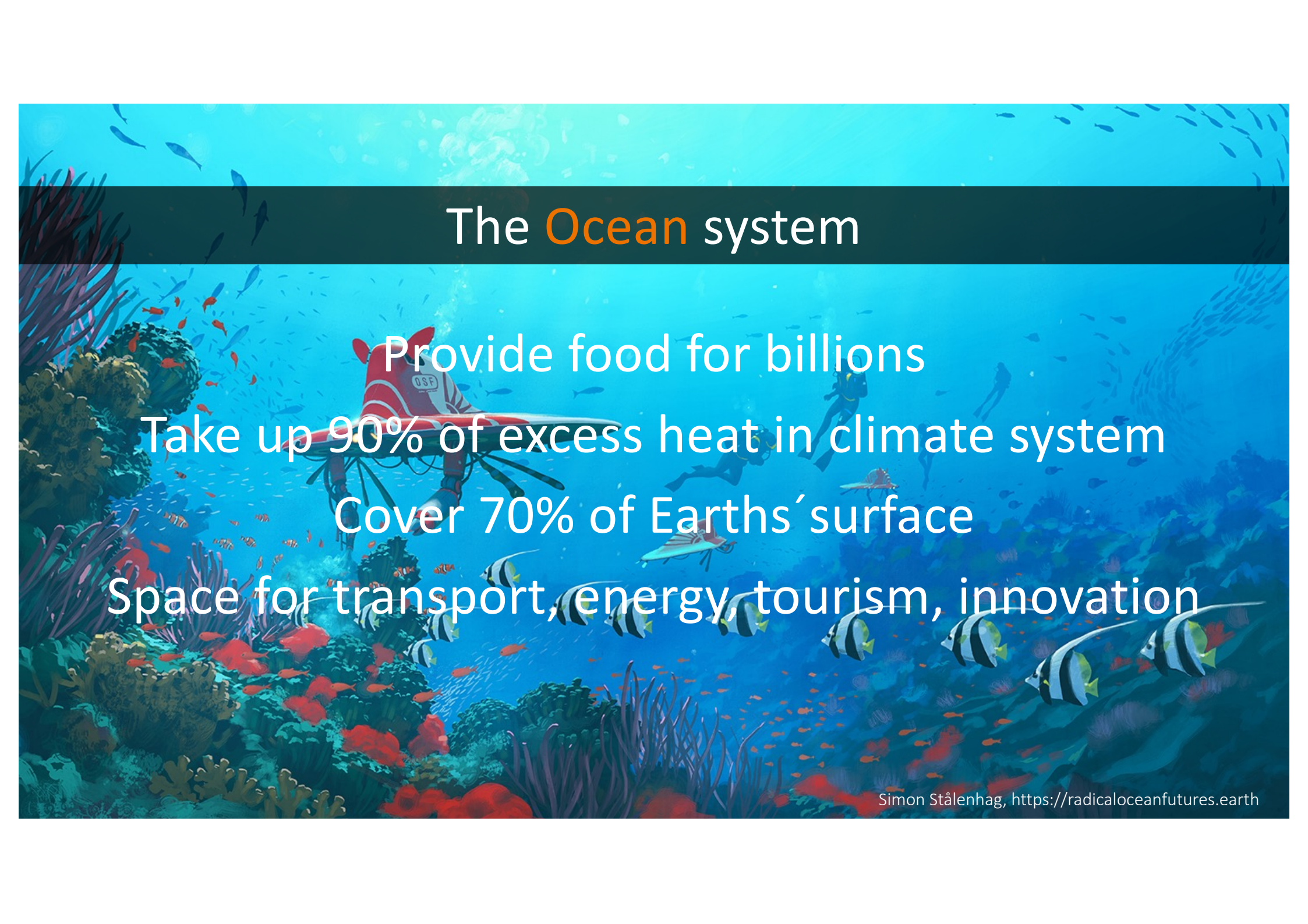
KUNGL. VETENSKAPS AKADEMIEN
THE ROYAL SWEDISH ACADEMY OF SCIENCES

The Biosphere



People are part of the biosphere and reshape it from local to global scales

At the same time humans are fundamentally dependent on the capacity of the biosphere to sustain and support societal development



The Ocean system

Provide food for billions

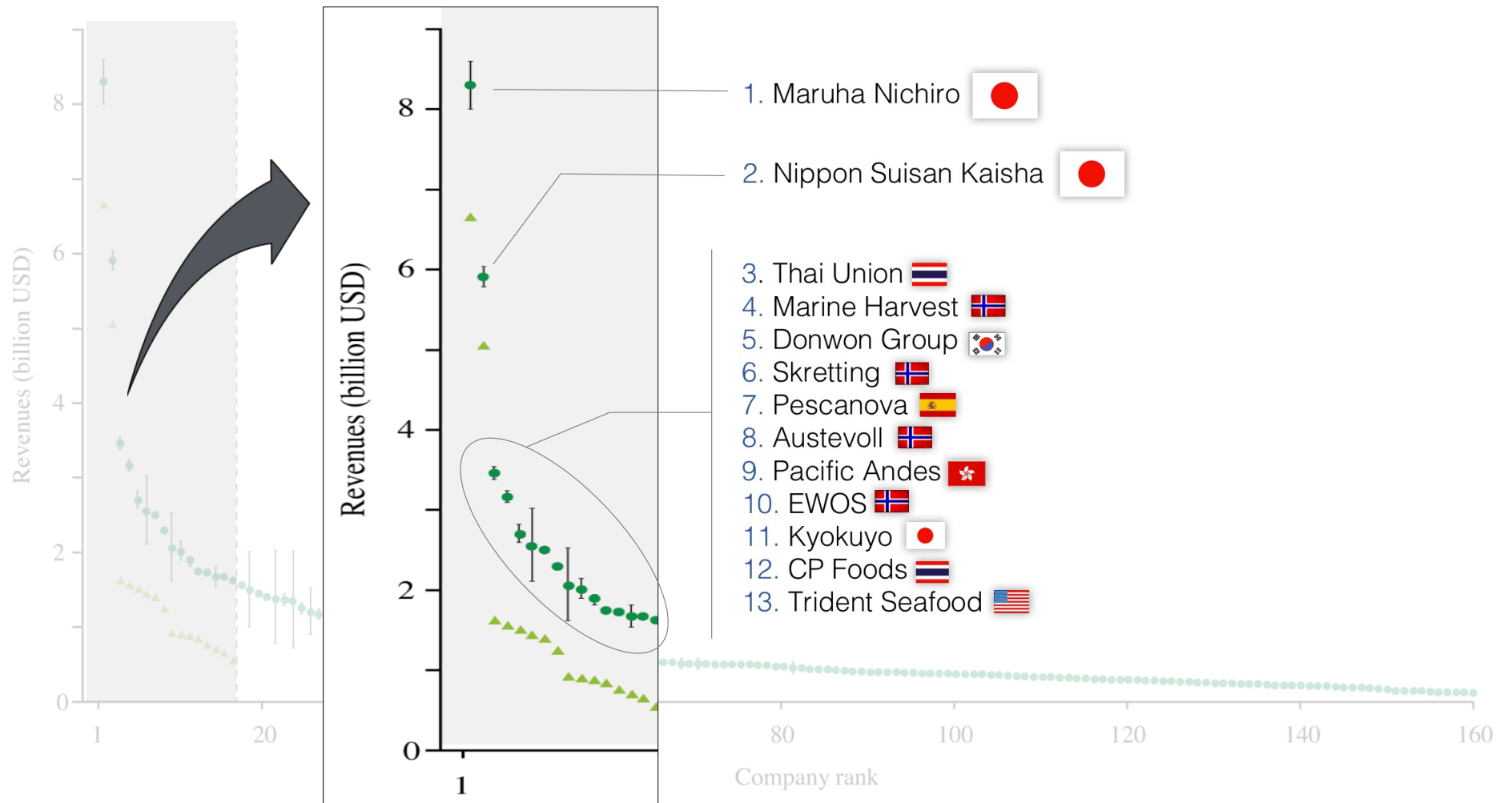
Take up 90% of excess heat in climate system

Cover 70% of Earth's surface

Space for transport, energy, tourism, innovation

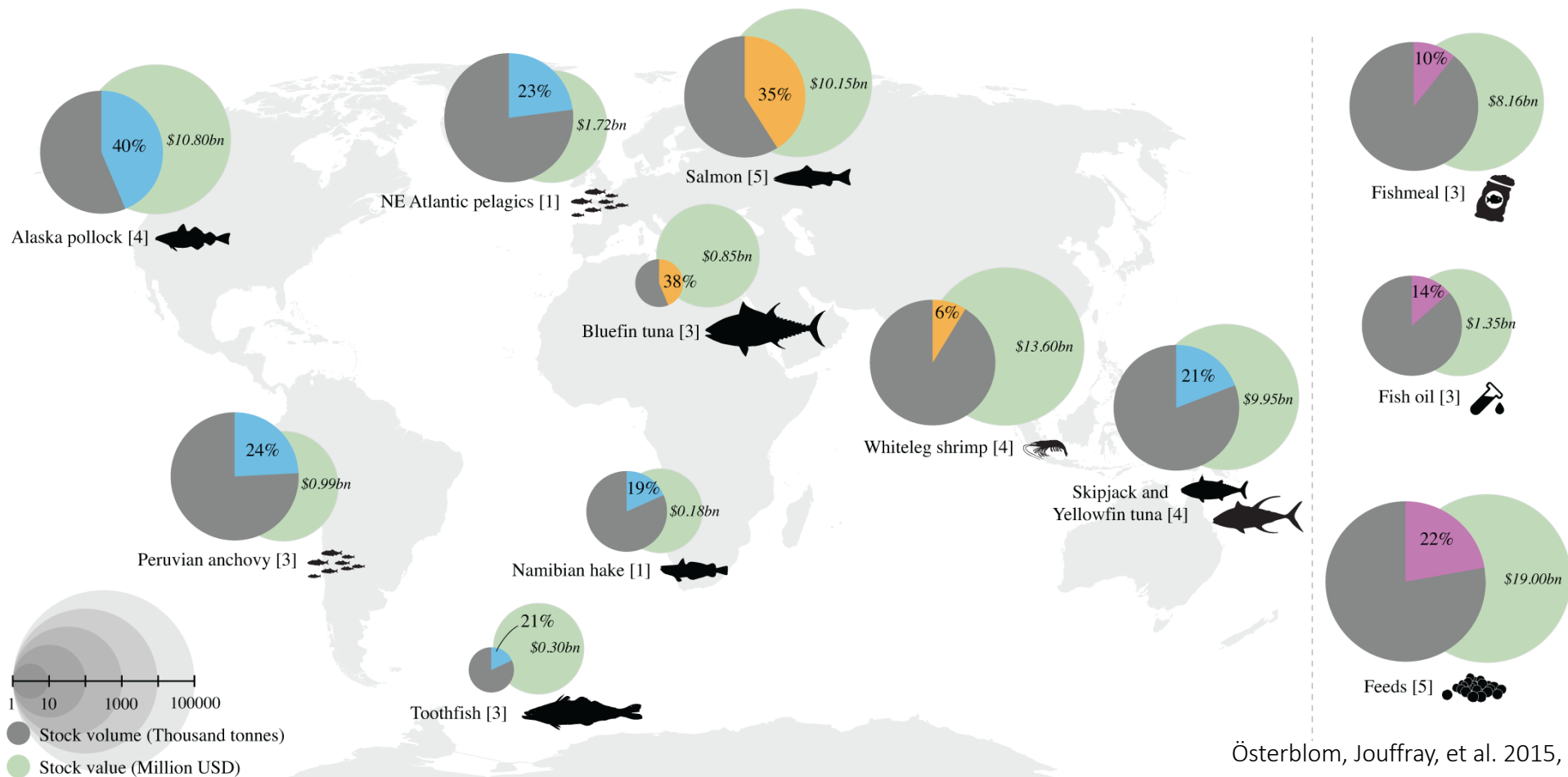
In the Anthropocene Ocean

- Water is warmer and more acidic
- Sea levels are rising
- Currents are shifting
- Ice is melting
- Animal populations are declining
- Food is at risk of pollution from toxins or plastic
- Dead zones are expanding



How much do keystone actors produce?

11-16% of global catch and up to 40% of several of the world's largest or most valuable stocks



Österblom, Jouffray, et al. 2015, PLOS ONE



KEYSTONE ACTORS

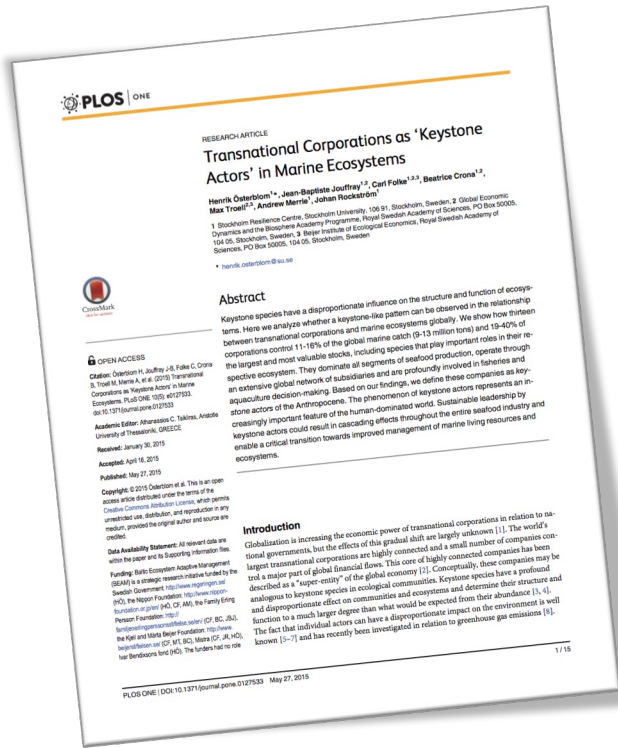
... **dominate** global production revenues and volumes

... **control** globally relevant segments of seafood production

... **connect** ecosystems globally through subsidiaries

... **influence** global governance processes and institutions

Transnational Corporations as 'Keystone Actors' in Marine Ecosystems (2015)

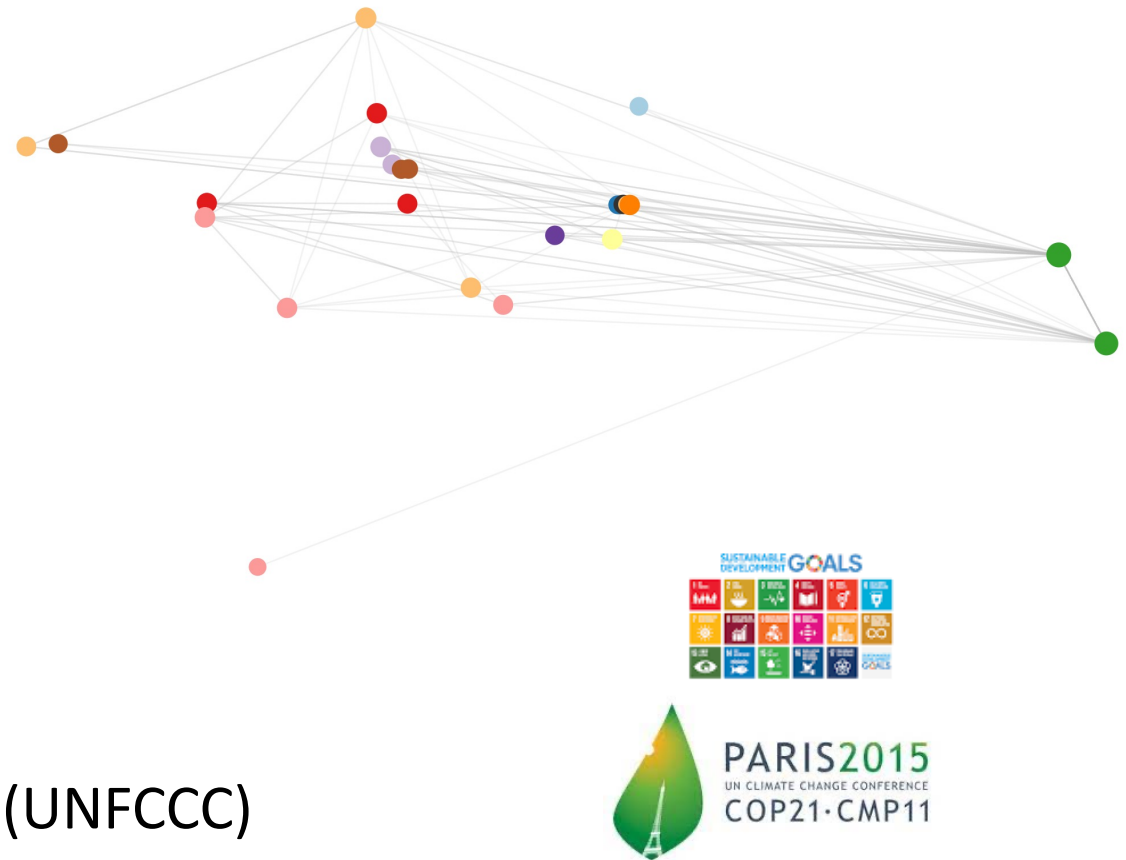


“... Sustainable leadership by keystone actors could result in cascading effects throughout the entire seafood industry and enable a critical transition towards improved management of marine living resources and ecosystems ...”



In 2015

- Seafood in crisis mode:
 - Labor abuse
 - Illegal, fisheries
 - Overuse of antibiotic
- The UN SDGs are published
- The Paris Climate agreement (UNFCCC)
- Two Swedish scientists start knocking on CEO doors



1st KEYSTONE DIALOGUE – November 2016, Maldives

Transformative Risks and Opportunities for the Global Seafood Industry



2016 CEO statement from the Soneva Dialogue

- Improve **transparency** and **traceability** in our own operations
- Engage in concerted efforts to help reduce **IUU fishing** and **endangered species**
- Engage in **science-based efforts** to improve fisheries and aquaculture management and productivity
- Engage in concerted efforts to eliminate any form of **modern slavery**
- Work towards reducing the use of **antibiotics** in aquaculture
- Reduce the use of **plastics** in seafood operations
- Reduce our own **greenhouse gas** emissions
- Secure new **growth** in aquaculture
- Collaborate and invest in emerging approaches and **technologies** for sustainable fisheries and aquaculture
- Support novel initiatives and **innovations** for ocean stewardship



By mid 2017, there was:

- 10 commitments for ocean stewardship
- 4 priorities for action
- 1 CEO as leader
- A handful of scientists to support the move “from words to action”
- 3 foundations willing to support experimentation

WALTON FAMILY
FOUNDATION



the David &
Lucile Packard
FOUNDATION

GORDON AND BETTY
MOORE
FOUNDATION

2016-2017
*Global network –
shared vision*

THE
**SONEVA
DIALOGUE**
THE
**STOCKHOLM
DIALOGUE**



WALTON FAMILY
FOUNDATION

2018
*Mobilisation for
action*

THE
**AMERSFOORT
DIALOGUE**
THE
**KARUIZAWA
DIALOGUE**



the David
& Lucile
Packard
FOUNDATION

2019
*"Global"
recognition*

THE
**BERGEN
DIALOGUE**
THE
**PHUKET
DIALOGUE**



GORDON AND BETTY
MOORE
FOUNDATION

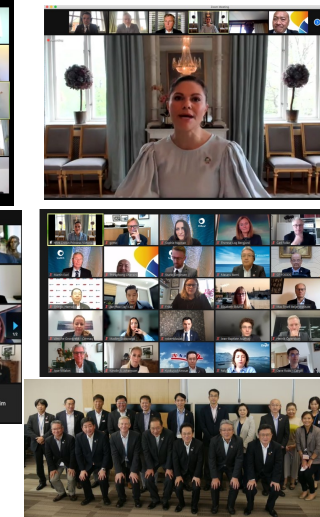
2020
*Time-bound
goals*

THE
**STOCKHOLM
DIALOGUE**
3RD WORKING MEETING
THE 2020 VIRTUAL
**KEYSTONE
DIALOGUE**



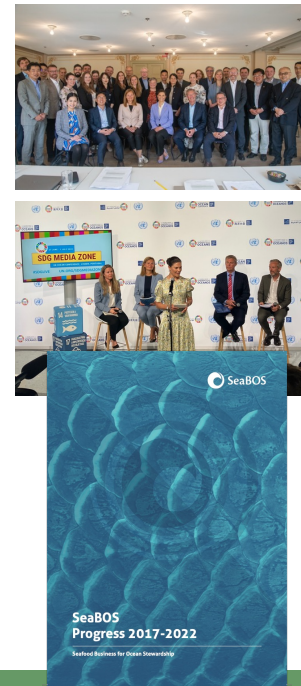
2021
*Concrete
results*

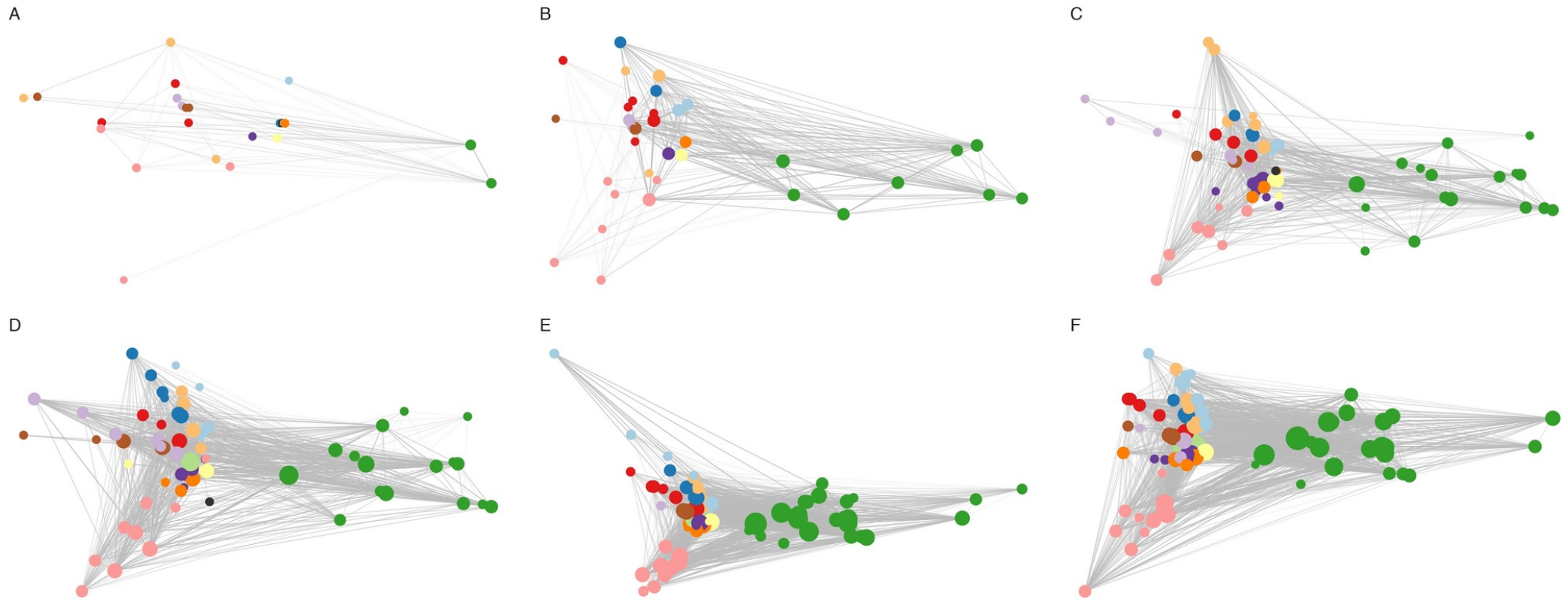
THE 2021 VIRTUAL
**WORKING
MEETING**
THE
**KEYSTONE
DIALOGUE**
October 2021 Virtual Dialogue



2022
*Reporting
Reconnecting*

THE 2022 STOCKHOLM
**WORKING
MEETING**



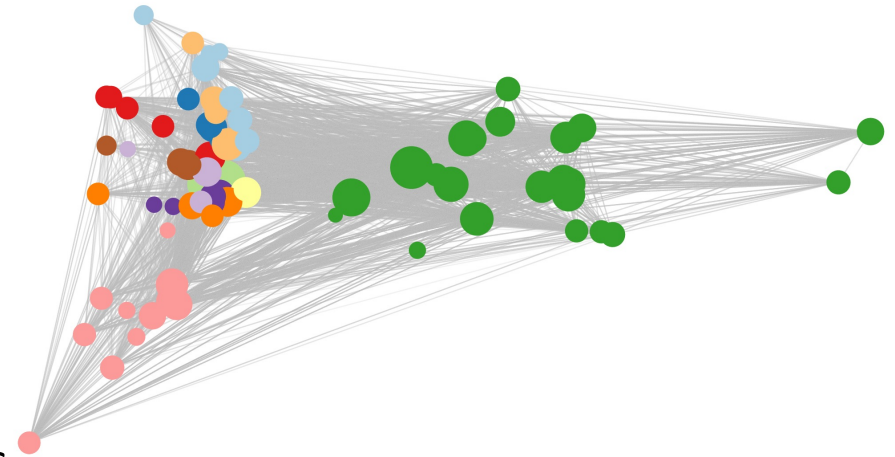


Number of interactions



In 2023

- SeaBOS is:
 - A legal entity, secretariat, funding
 - Supported by independently funded scientists
 - Recognized in the seafood industry and in science
 - A source of inspiration
- 10 SeaBOS members have developed:
 - Competitive advantaged
 - Ways to learn faster than their peers
 - Means to advocate for science-based management of fisheries and aquaculture
 - New funding, markets, and credibility



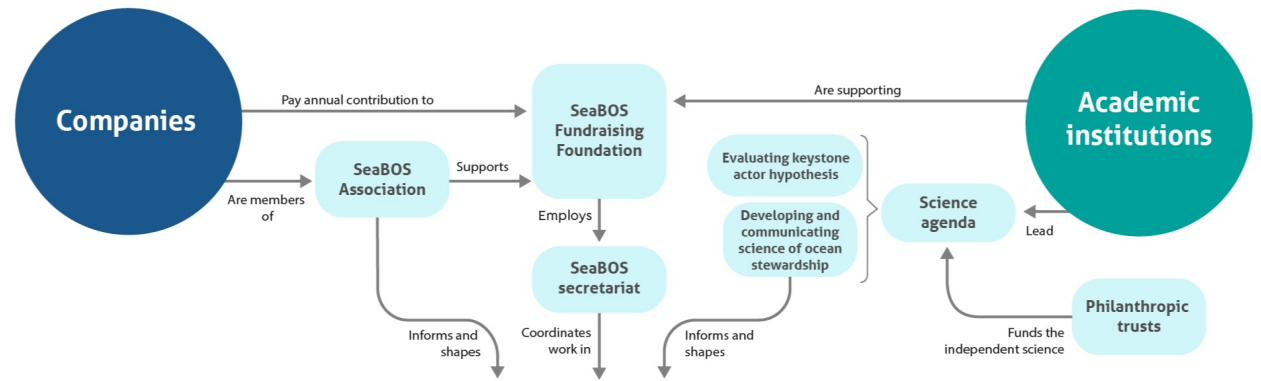
What have the companies actually done?

- 10/10 have completed materiality assessments (7/10 in 2016)
- 10/10 are reporting to the GRI standard (6/10 in 2016)
- 8/10 are transparent about their production volumes (4/10 in 2016)
- 10/10 have agreed to time-bound goals to address:
 - Illegal fishing
 - Forced, bonded and child labor
 - Antibiotic usage
 - Endangered species
- 10/10 have set climate goals (3/10 in 2016)





Science-Industry collaboration for a global transformation towards sustainable seafood production and a healthy ocean



Task Force I
IUU/ES/Labor



Task Force II
Communications



Task Force III
Working with governments and AMR



Task Force IV
Transparency / governance



Task Force V
Plastics



Task Force VI
Climate

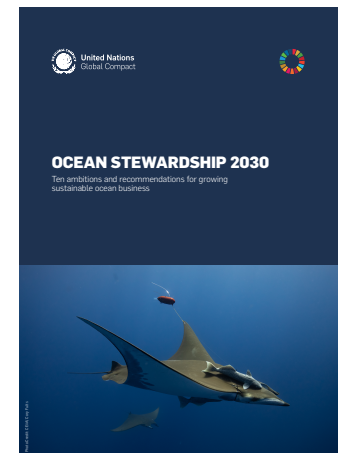


SeaBOS
Progress 2017-2022

Launch @UN Ocean, Portugal, June 29, 14:00

What changed since 2016?

- Ocean sustainability central to political agendas
 - SDGs are becoming mainstream
 - UN Ocean conference 2017 and in 2022
 - UN decade of ocean science 2021-2030
 - High Level Panel for a Sustainable ocean economy 2018-2022
- The ocean on corporate agendas
 - UN Global Compact "Ocean Stewardship Coalition"
 - Banks, investors, insurance, stock markets – risks and opportunities
- Ocean sustainability is key for global sustainability



Lessons learned?

- A shared vision, **long term** perspective and **trust**, are instrumental.
 - **Learning** is multidirectional:
 - From science to business, between companies, from business to science.
 - Challenges are **complex**, diverse capacities needed
 - Effective collaboration generates **results** and **inspires** others.
 - Connecting to **existing initiatives** and policy process helps accelerate.
 - Everyone is **outside their comfort zone** - tension is common and good
 - It remains an **experiment**... responsibility to document, listen, reflect.
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Thank you!

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Stockholm Resilience Centre
Sustainability Science for Biosphere Stewardship



Stanford | Center for
Ocean Solutions

