

# Why & how to achieve Ocean Health?

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# Ocean Health

One Earth



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## Perspective Operationalizing Ocean Health: Toward Integrated Research on Ocean Health and Recovery to Achieve Ocean Sustainability

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Protecting the ocean has become a major goal of international policy as human activities increasingly endanger the integrity of the ocean ecosystem, often summarized as "ocean health." By and large, efforts to protect the ocean have failed because, among other things, (1) the underlying socio-ecological pathways have not been properly considered, and (2) the concept of ocean health has been ill defined. Collectively, this prevents an adequate societal response as to how ocean ecosystems and their vital functions for human societies can be protected and restored. We review the confusion surrounding the term "ocean health" and suggest an operational ocean-health framework in line with the concept of strong sustainability. Given the

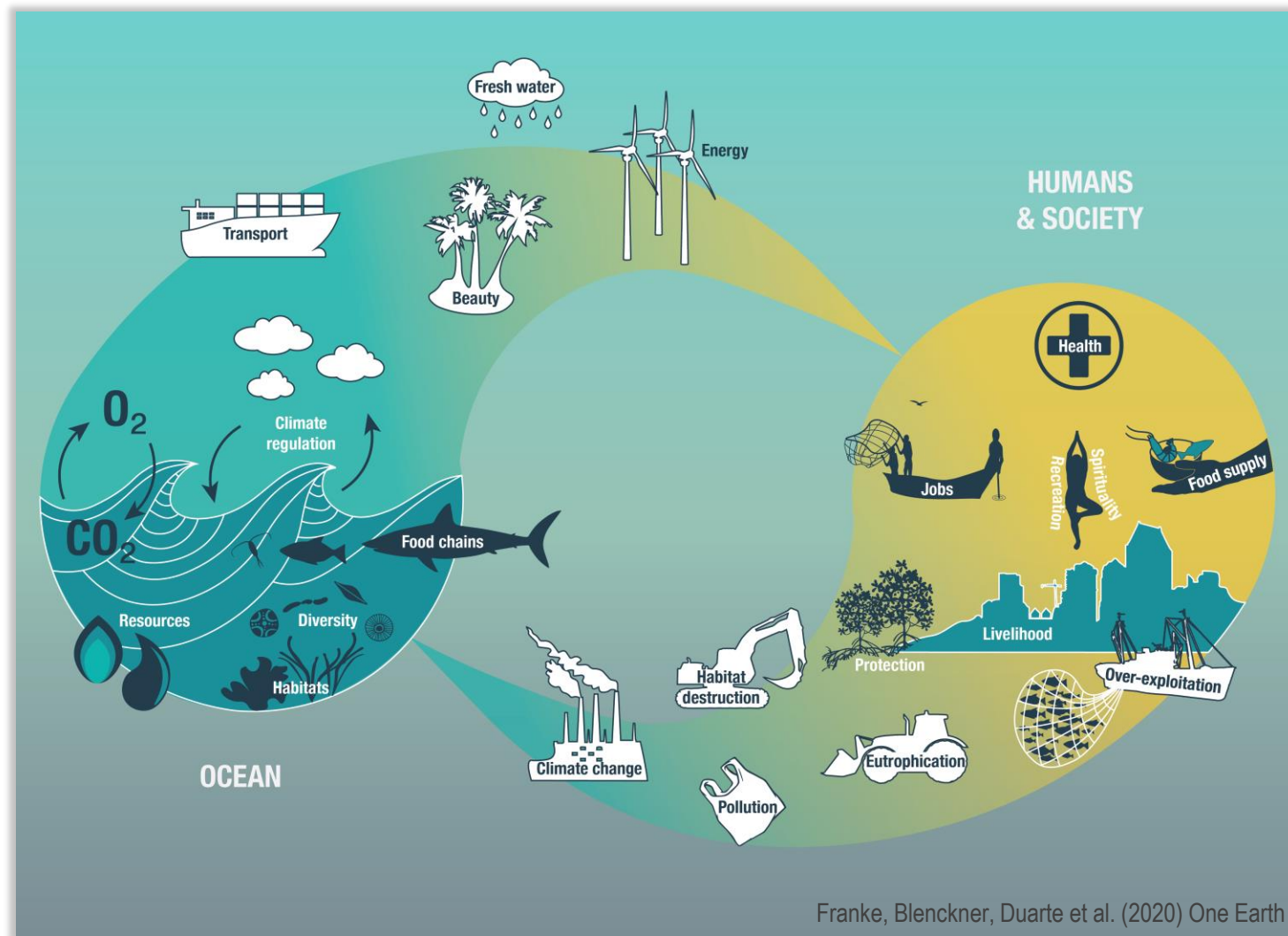


# Why Ocean Health?



Source: [diveplanit.com](https://diveplanit.com)

# Human-ocean system



# UN Ocean Decade



**2021**  
**2030** United Nations Decade  
of Ocean Science  
for Sustainable Development

The Ocean Decade aims to  
“... generate and use knowledge for the  
transformational action needed to  
achieve a **healthy**, safe and resilient  
**ocean** for sustainable development ...”

# UN SDG 14



“...sustainably manage and protect marine and coastal ecosystems (...) and take action for their restoration in order to achieve **healthy** and productive **oceans**...”

# Ocean Health



Organism health

Ecosystem health



Human health



# Healthy Oceans are...



**RESILIENT**

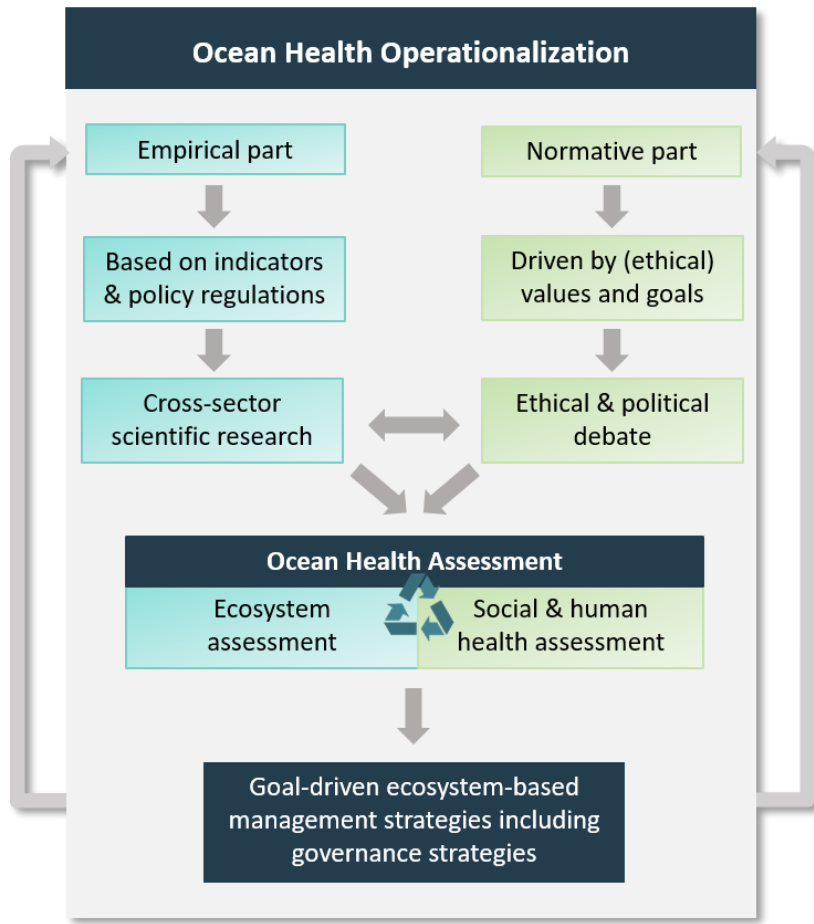


**PRODUCTIVE**



**DIVERSE**

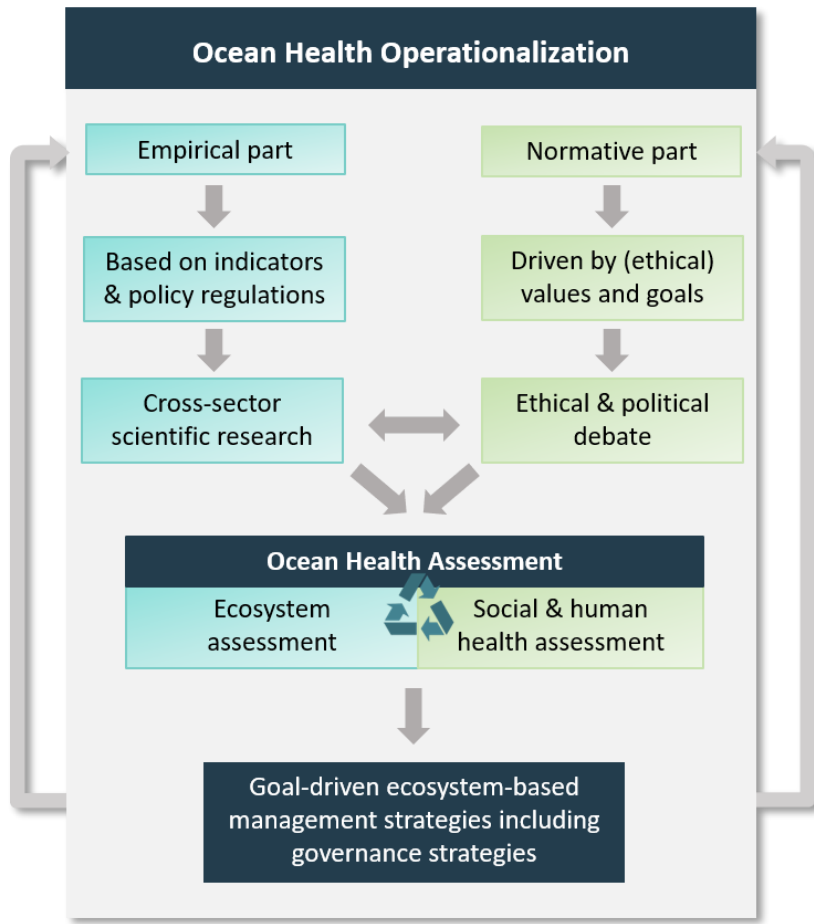
# Operationalizing Ocean Health



## 7-Step Ocean Health Management Framework

- I. Indicator-based empirical measurements
- II. Normative values & goals
- III. Diagnostic tools and communication
- IV. Ocean health assessment
- V. Ecosystem-based management strategies
- VI. Governance strategies
- VII. Continuous adaptation

# Operationalizing Ocean Health



**INTEGRATION**

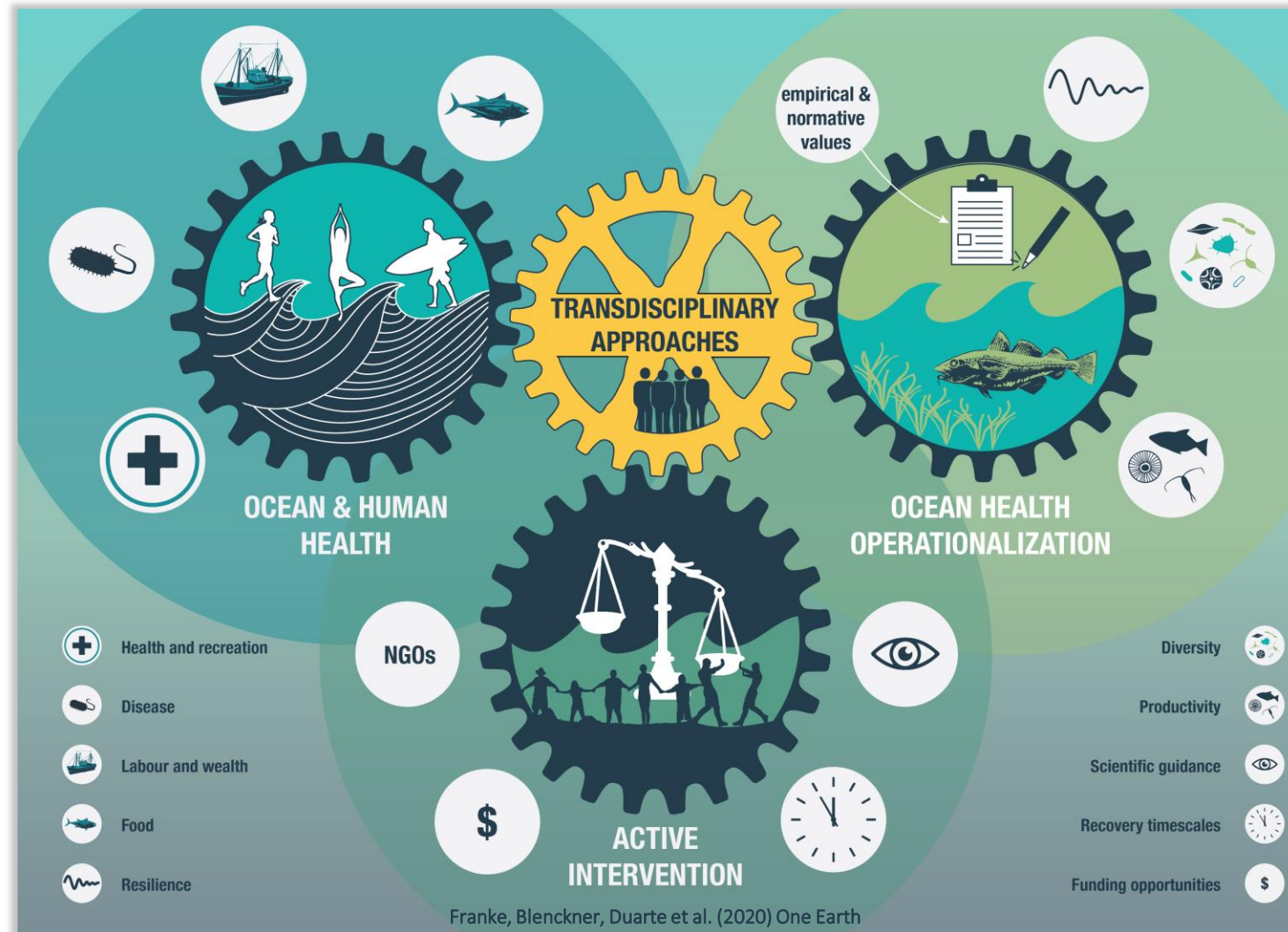


**HOLISTIC  
UNDERSTANDING**

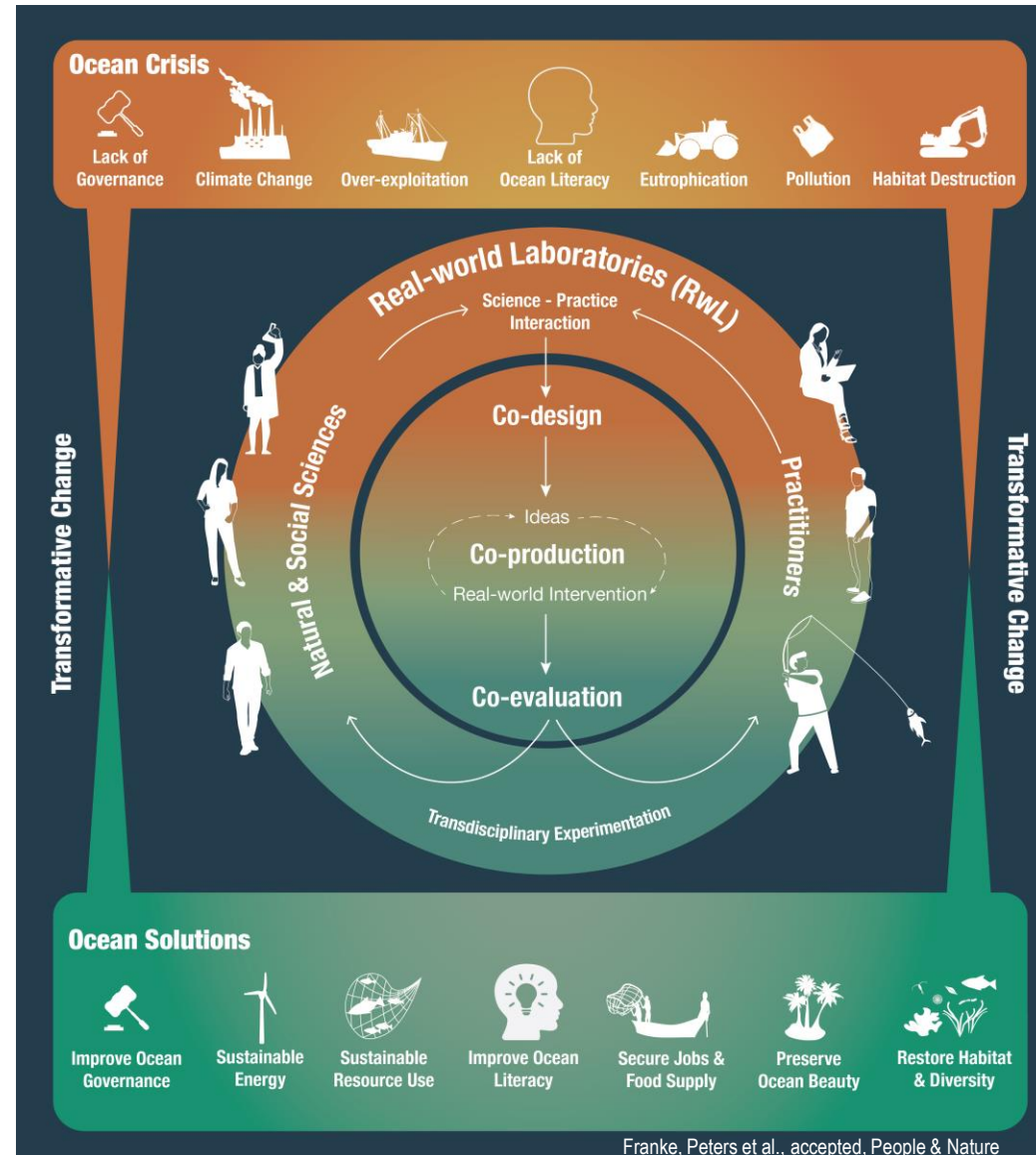


**SUSTAINABLE  
SOLUTIONS**

# Transdisciplinary framework



# Marine real-world labs



# Ocean Decade Mission

Transformative ocean science solutions for sustainable development,  
**connecting people and our ocean**



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# Thank you for your attention



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# References

The **ocean health management framework** is a further development of the IEA approach outlined by:

**Levin** PS, Fogarty MJ, Murawski SA and Fluharty D (2009) Integrated ecosystem assessments: developing the scientific basis for ecosystem-based management of the ocean. PLoS Biol. 7, e14

**Harvey** CJ, Kelble CR and Schwing FB (2017) Implementing “the IEA”: using integrated ecosystem assessment frameworks, programs, and applications in support of operationalizing ecosystem-based management. ICES J. Mar. Sci. 74, 398–405

The **marine real-world lab concept** is based on:

**Wanner** M, Hilger A, Westerkowski J, Rose M, Stelzer F & Schöpke N (2018) Towards a cyclical concept of real-world laboratories. A transdisciplinary research practice for sustainability transitions. DisP - The Planning Review, 54(2), 94–114