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# Turning the Tide

## Unlocking the Potential of Seagrass Ecosystems through Locally-Led Valuation Approaches

'24

*Photo by Chloe King in the Horsburgh Atoll, Maldives*

# PRESENTATION OUTLINE

01 **INTRODUCTION**

*Exploring the nature of value & value of nature*

02 **RESEARCH APPROACH**

*Assessing seagrass research through three distinct methodologies*

03 **RESULTS**

*An overview of results from systematic map, surveys, and interviews*

04 **DISCUSSION**

05 **CONCLUSION**

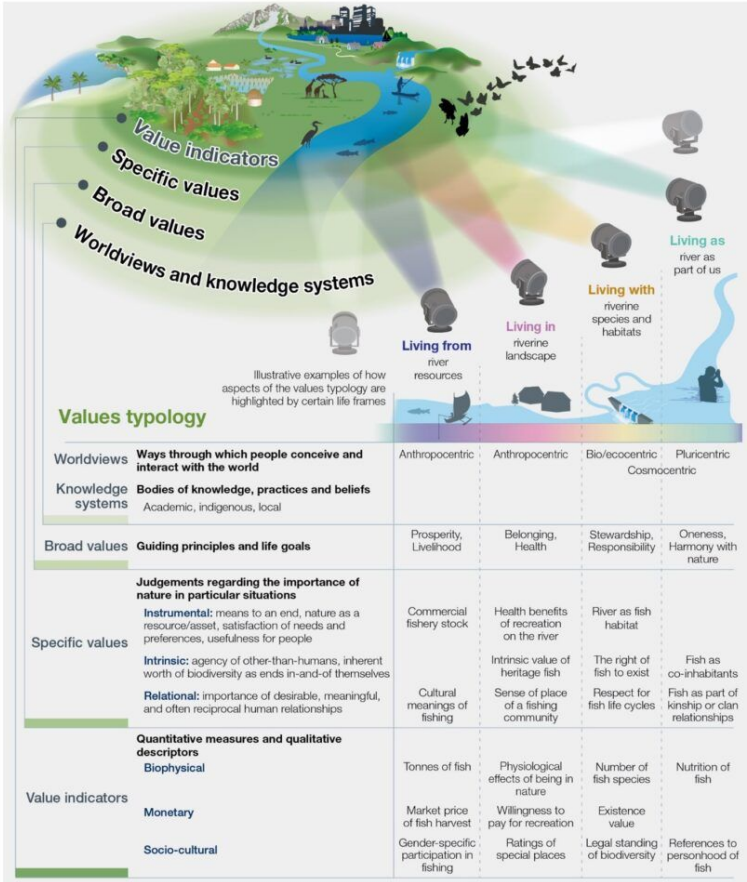
06 **RECOMMENDATIONS**

01

# INTRODUCTION

EXPLORING THE NATURE OF VALUE IN PAYMENTS FOR ECOSYSTEM SERVICES (PES) SCHEMES

'22




**Values typology**

| | | | | | |
|---|---|---|---|---|---|
| Worldviews | **Ways through which people conceive and interact with the world** | Anthropocentric | Anthropocentric | Bio/ecocentric | Pluricentric Cosmocentric |
| Knowledge systems | **Bodies of knowledge, practices and beliefs** Academic, indigenous, local | | | | |
| Broad values | **Guiding principles and life goals** | Prosperity, Livelihood | Belonging, Health | Stewardship, Responsibility | Oneness, Harmony with nature |
| Specific values | **Judgements regarding the importance of nature in particular situations** | | | | |
| | **Instrumental:** means to an end, nature as a resource/asset, satisfaction of needs and preferences, usefulness for people | Commercial fishery stock | Health benefits of recreation on the river | River as fish habitat | |
| | **Intrinsic:** agency of other-than-humans, inherent worth of biodiversity as ends in-and-of themselves | | Intrinsic value of heritage fish | The right of fish to exist | Fish as co-inhabitants |
| | **Relational:** importance of desirable, meaningful, and often reciprocal human relationships | Cultural meanings of fishing | Sense of place of a fishing community | Respect for fish life cycles | Fish as part of kinship or clan relationships |
| Value indicators | **Quantitative measures and qualitative descriptors** | | | | |
| | **Biophysical** | Tonnes of fish | Physiological effects of being in nature | Number of fish species | Nutrition of fish |
| | **Monetary** | Market price of fish harvest | Willingness to pay for recreation | Existence value | |
| | **Socio-cultural** | Gender-specific participation in fishing | Ratings of special places | Legal standing of biodiversity | References to personhood of fish |

*Source: IPBES, 2022*

# There are over 50 methods for "valuing" nature

Research from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), conducted by 80 scientists over 4 years using more than 13,000 sources

# Only **1% of studies** involved stakeholders in the valuation process

# DEMAND IS HIGH + BETTER SOLUTIONS NEEDED

**30%**

of the 2.4 billion people living near the ocean a are dependent upon its ecosystem services

**51%**

of asset managers sought investment in blue carbon

**$8.1 trillion**

needed in total investment in Nature-based Solutions by 2030

*Source: Chakraborty, Gasparatos and Blasiak, 2020; Credit Suisse, 2020; UNEP, 2021*

# ….BUT WHAT SOLUTIONS ARE WE OFFERING?

## Ecosystem Services

have evolved from a metaphor…

in which “valuing” nature…

…to a tradable commodity

…has become synonymous with **monetizing it**

*Source: Engel, Pagiola and Wunder, 2008; Silvertown, 2015*

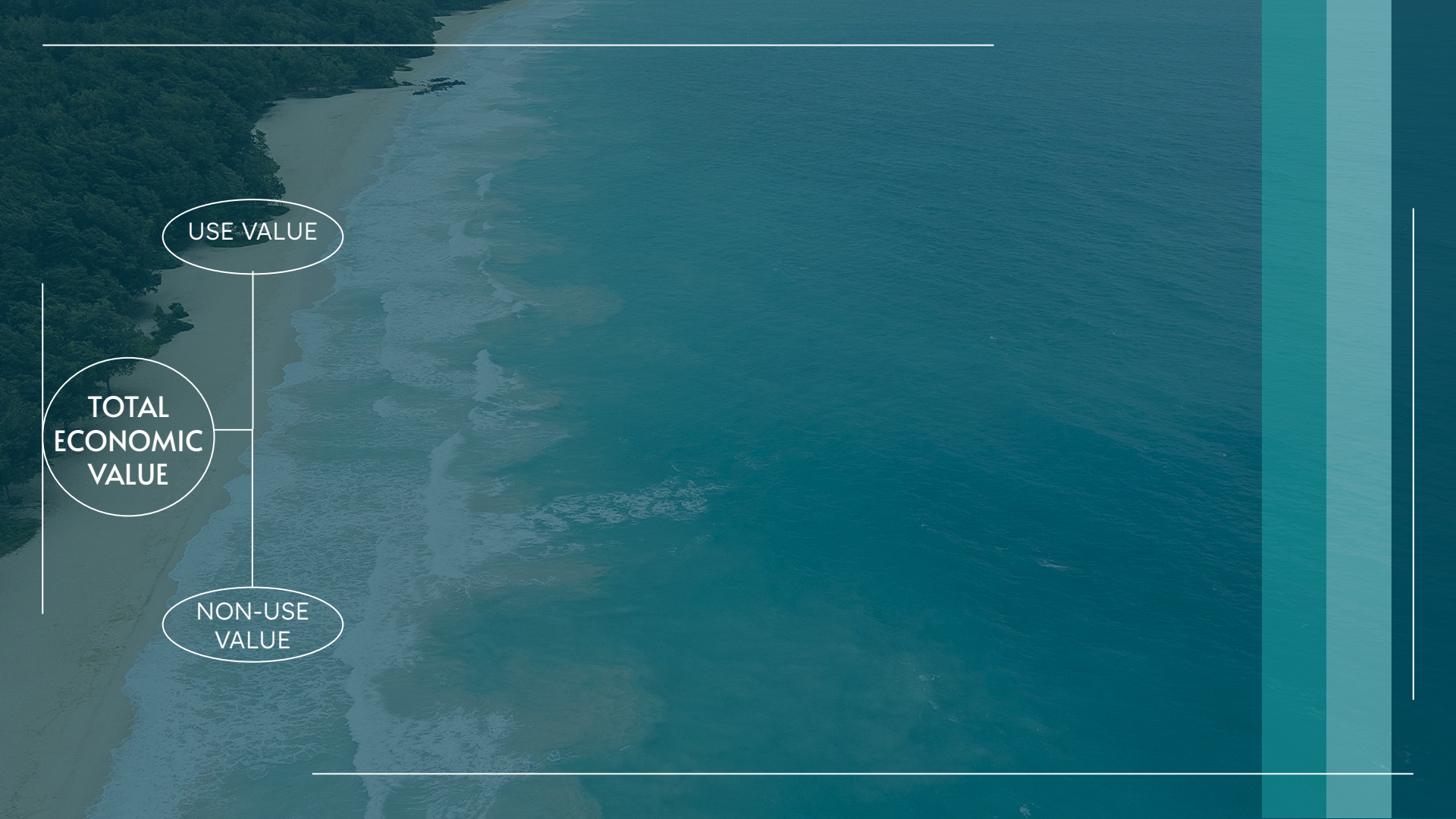
# $36 - 42 billion

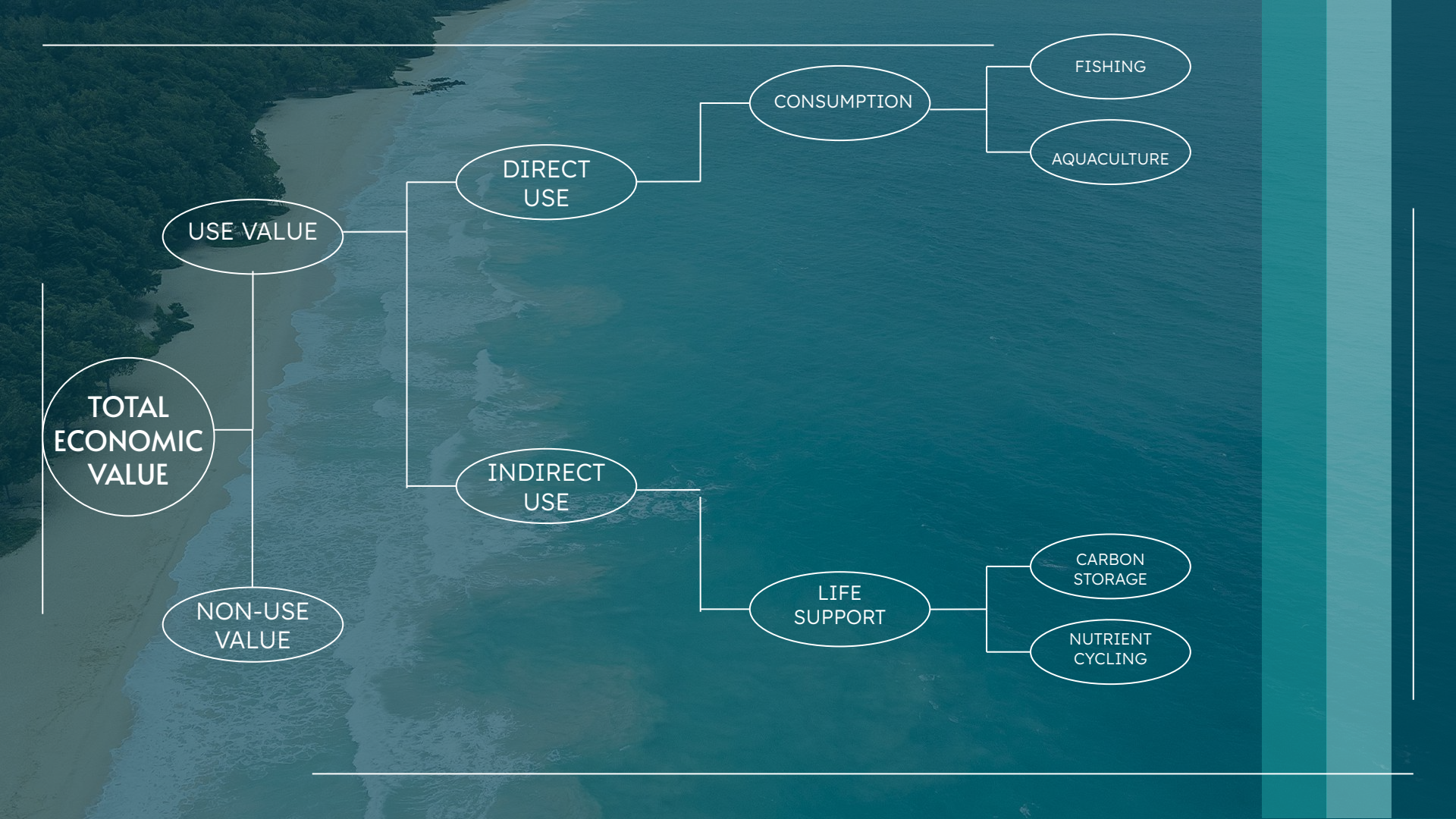
**spent on Payments for Ecosystem Services (PES) programs annually, with the voluntary carbon market exceeding $1 billion in 2020**

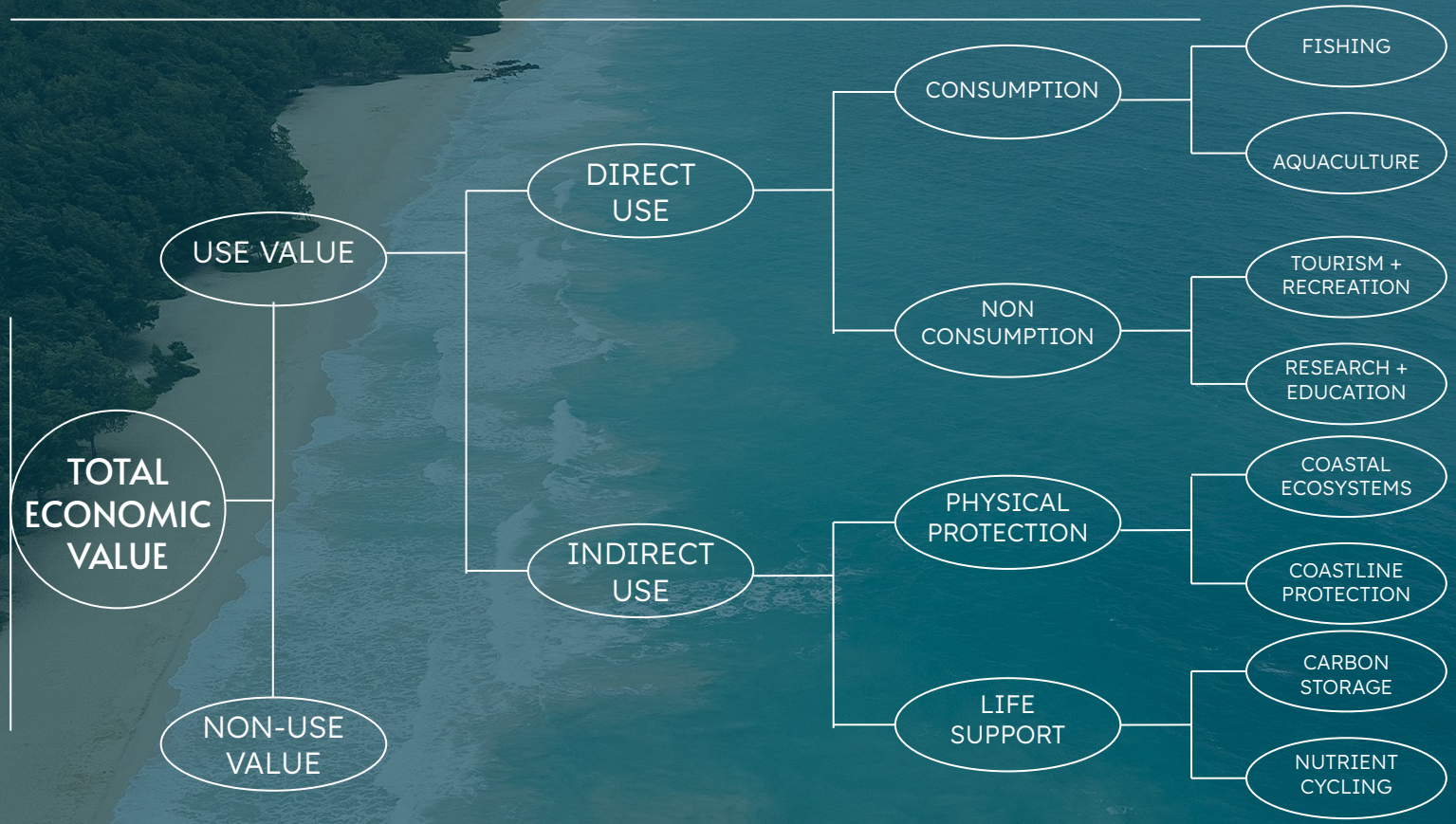
*Source: Salzaman, 2018*

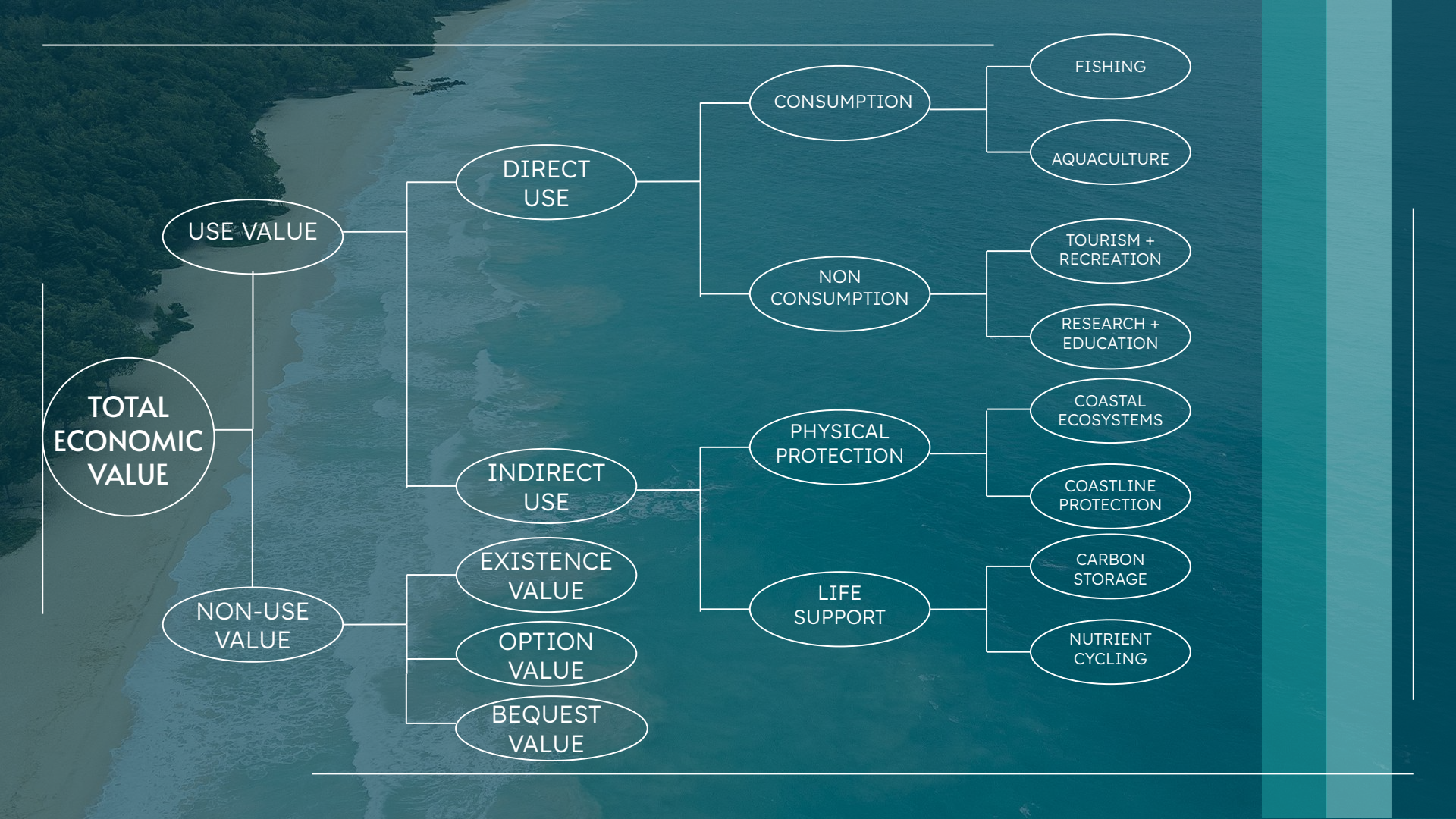
The social institutions that govern common-pool resources such as fisheries are fundamentally “seats of non-market relationships.”

- *The Economics of Biodiversity: The Dasgupta Review (2021)*


USE VALUE
TOTAL ECONOMIC VALUE
NON-USE VALUE


TOTAL ECONOMIC VALUE
USE VALUE
NON-USE VALUE
DIRECT USE
INDIRECT USE
CONSUMPTION
FISHING
AQUACULTURE
LIFE SUPPORT
CARBON STORAGE
NUTRIENT CYCLING


TOTAL ECONOMIC VALUE
USE VALUE
NON-USE VALUE
DIRECT USE
INDIRECT USE
CONSUMPTION
NON CONSUMPTION
PHYSICAL PROTECTION
LIFE SUPPORT
FISHING
AQUACULTURE
TOURISM + RECREATION
RESEARCH + EDUCATION
COASTAL ECOSYSTEMS
COASTLINE PROTECTION
CARBON STORAGE
NUTRIENT CYCLING


TOTAL ECONOMIC VALUE
USE VALUE
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DIRECT USE
INDIRECT USE
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OPTION VALUE
BEQUEST VALUE
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PHYSICAL PROTECTION
LIFE SUPPORT
FISHING
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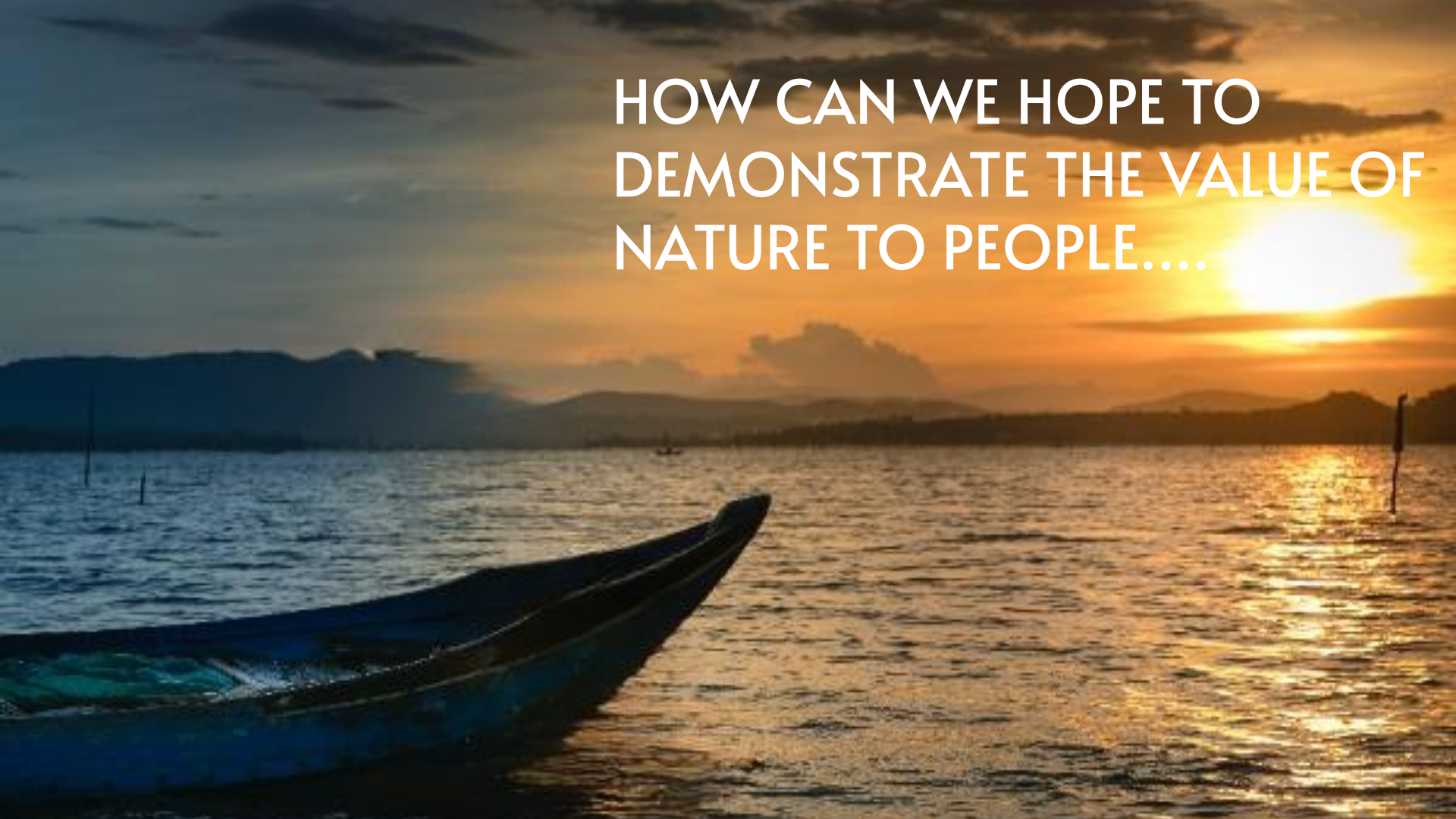

HOW CAN WE HOPE TO DEMONSTRATE THE VALUE OF NATURE TO PEOPLE….


IF WE ARE ONLY TELLING
HALF THE STORY?

02

# RESEARCH APPROACH & METHODS

'22

# ONE MAIN RESEARCH QUESTION:

How can Nature-based Solutions—and seagrass ecosystems in particular— be more effectively valued, financed, and implemented at the local scale?

# THREE PRIMARY DATA COLLECTION METHODS

1

## SYSTEMATIC MAP

*56*

Screened 75 studies and conducted a full-text analysis of 56

2

## SURVEYS

*60*

Surveys with ecosystem-based project managers and local community implementers

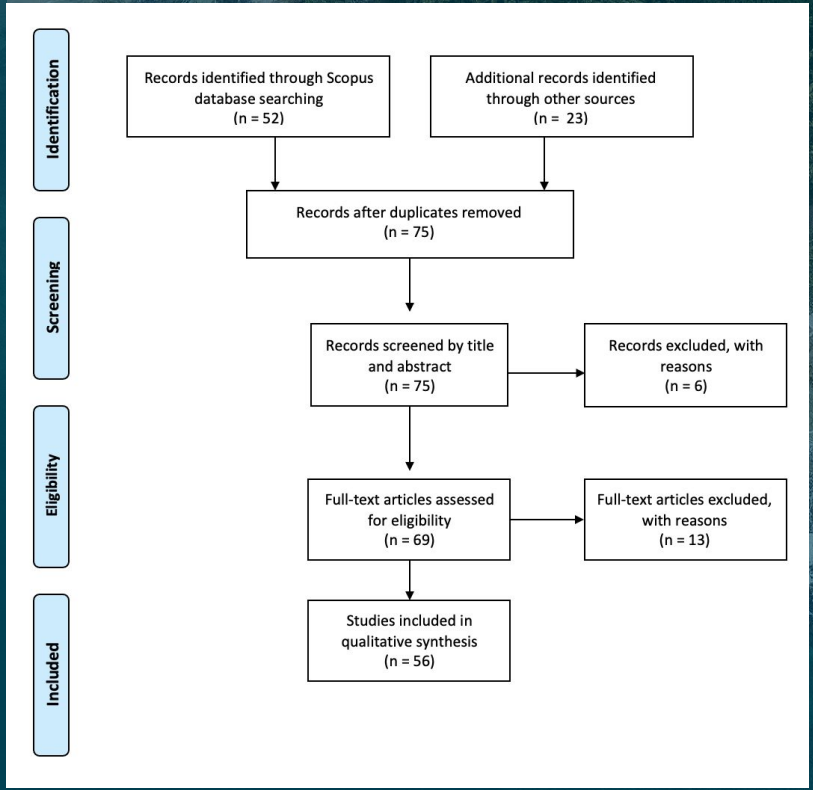
3

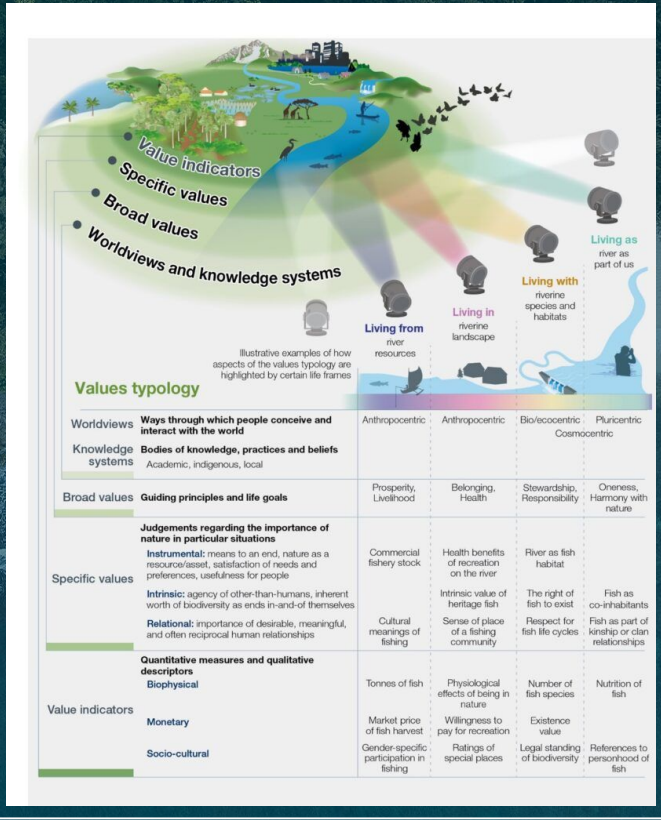
## EXPERT INTERVIEWS

*24*

Interviews with 24 experts in fields of NbS financing, PES implementation, and voluntary carbon markets.

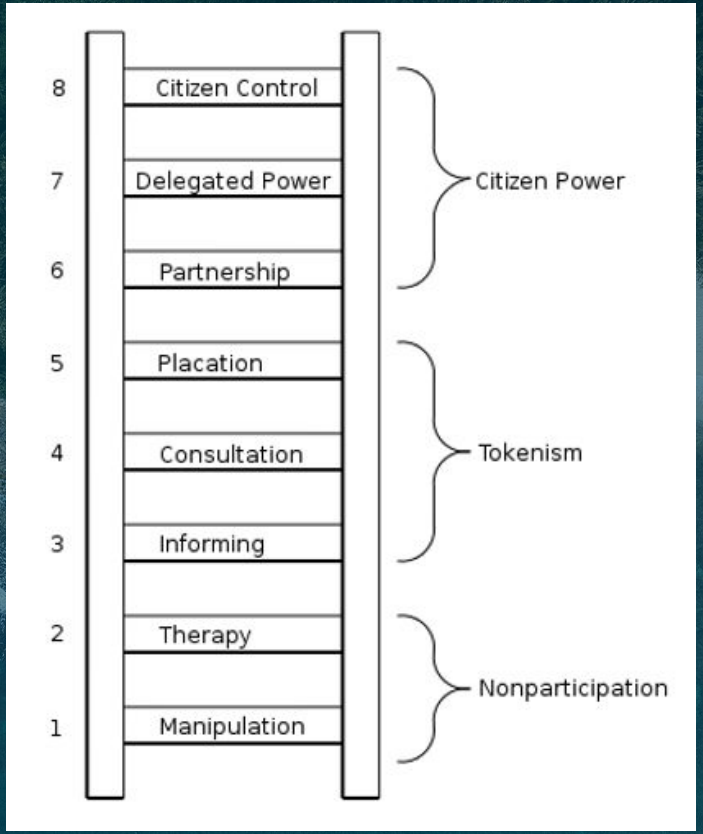
# SYSTEMATIC MAP



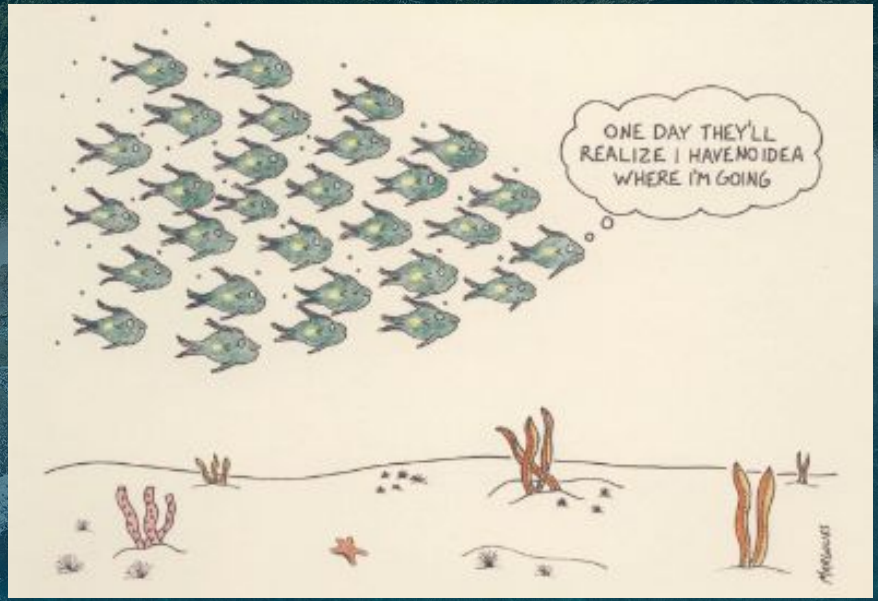
# SURVEYS +INTERVIEWS

- 60 online surveys
- 24 expert interviews
- Using Arnstein's ladder of citizen participation to assess the extent to which PMs delegated power to enable citizen control



# + REFLECTIONS ON LEADERSHIP

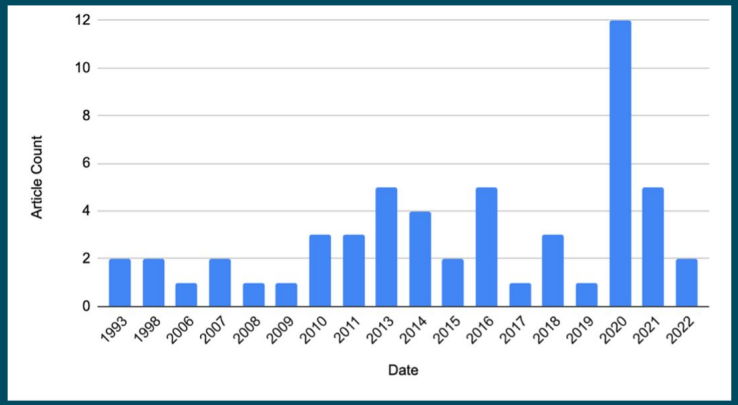
- Reflecting on the nature of leadership & how to enable local leadership to emerge & flourish
- + how placement host Blue Ventures can lead change in the conservation seascape

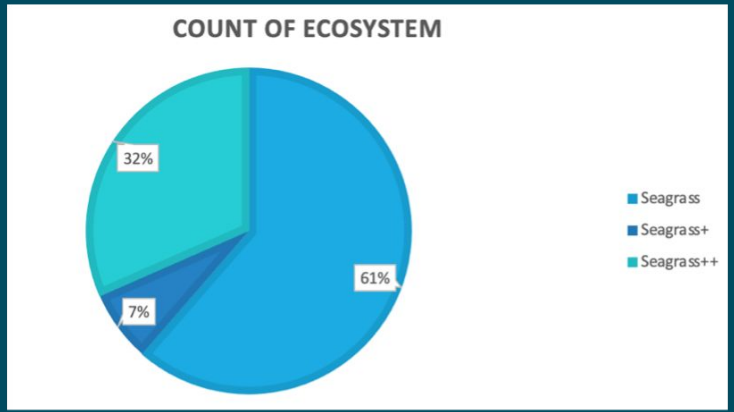


# 03

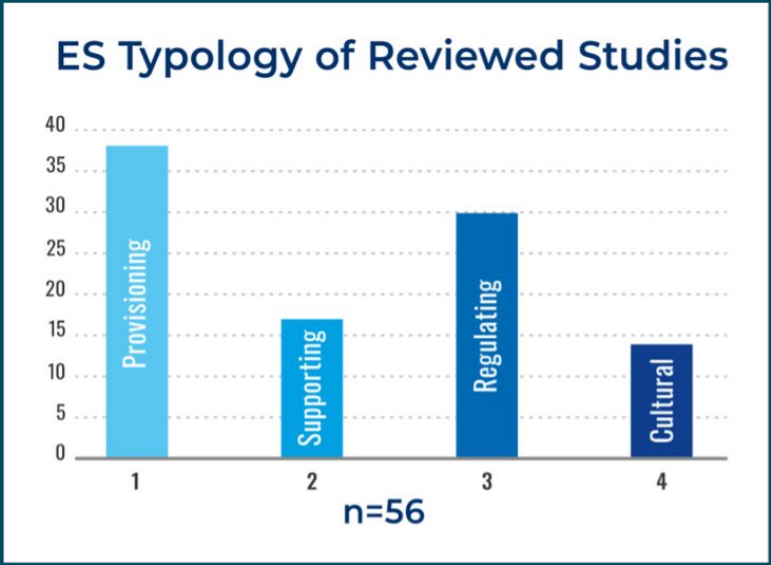
# RESULTS

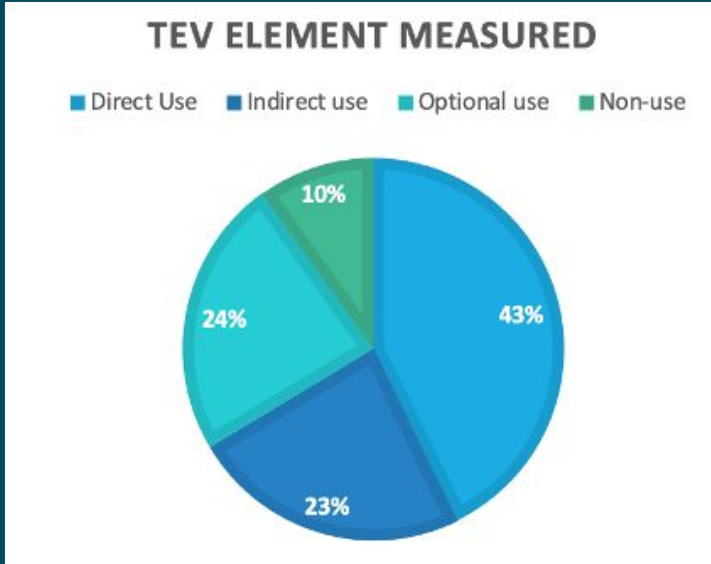
# SYSTEMATIC MAP



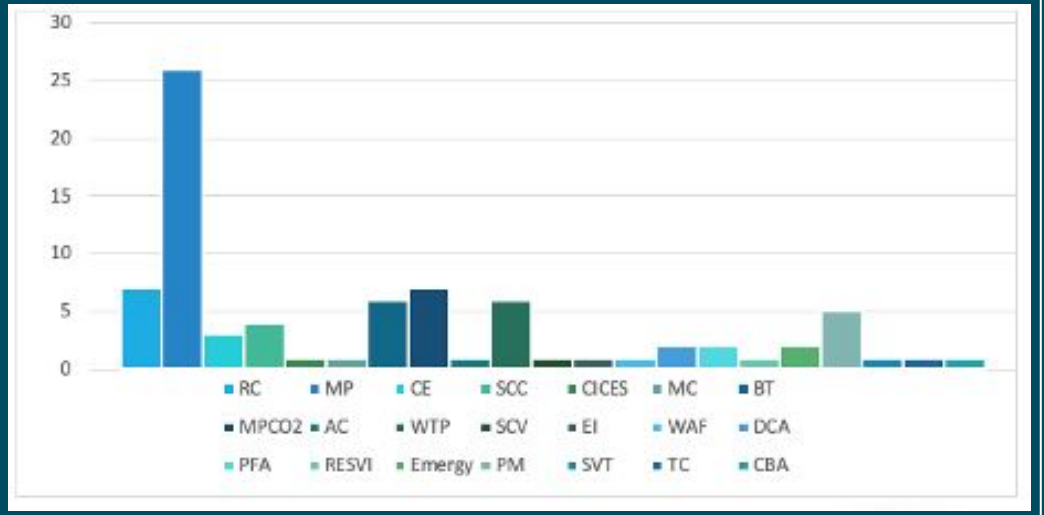
# SYSTEMATIC MAP



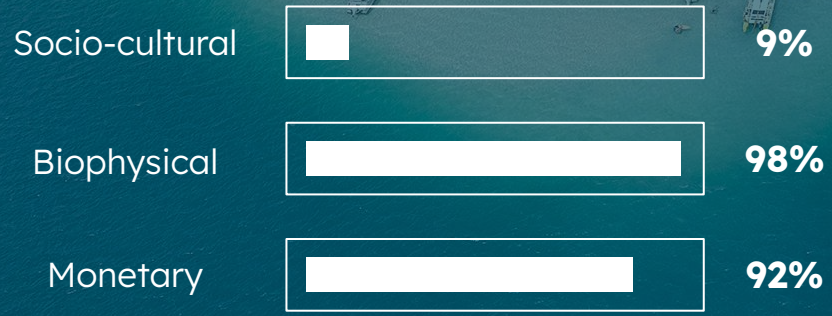
# SYSTEMATIC MAP

- Most utilized valuation methods included:
  - Market Price
  - Replacement Cost
  - Willingness to Pay
  - Benefit Transfer



# SYSTEMATIC MAP – VALUE TYPOLOGIES

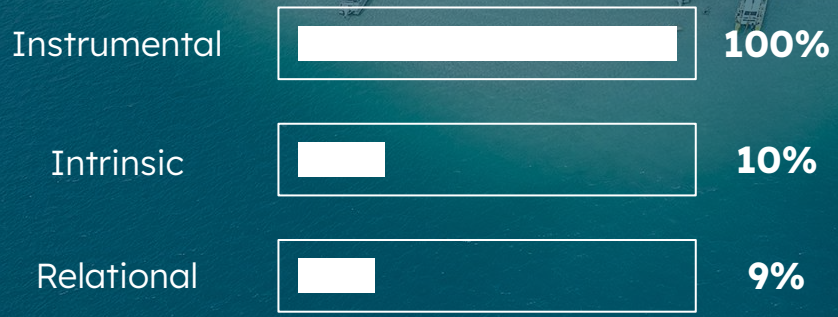
## Value Indicators




*Quantitative measures and qualitative descriptors that reflect nature's importance to people*

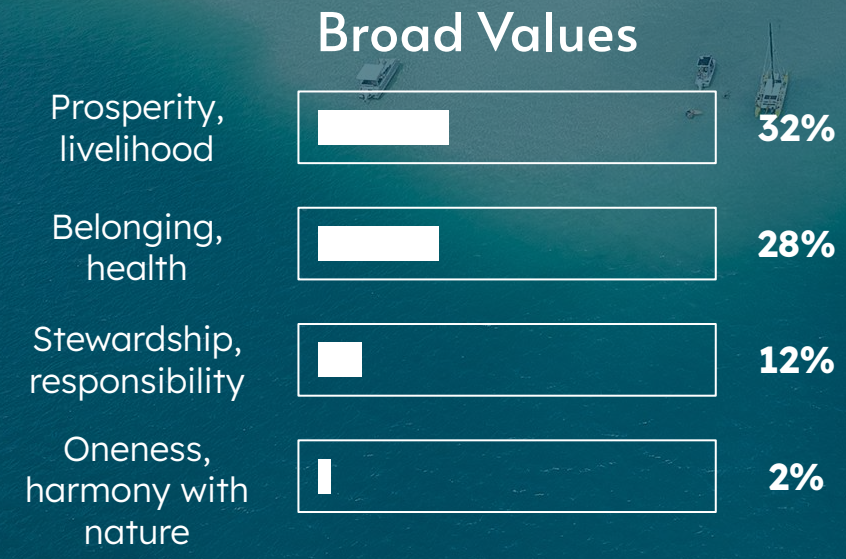
# SYSTEMATIC MAP – VALUE TYPOLOGIES

## Specific Values



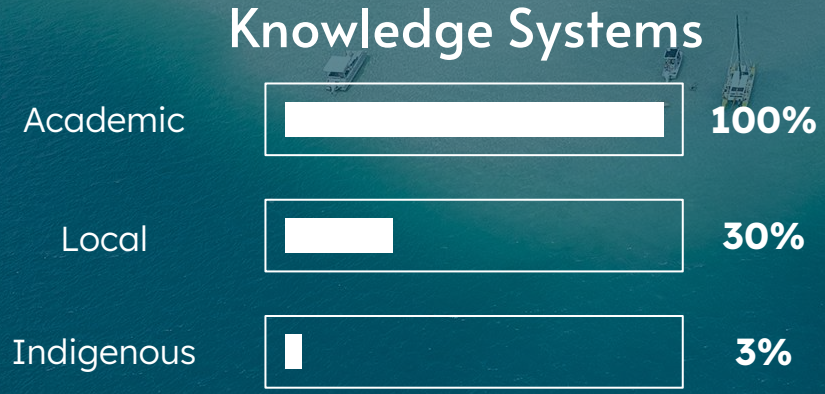

*Judgements regarding nature's importance in particular situations*

# SYSTEMATIC MAP – VALUE TYPOLOGIES



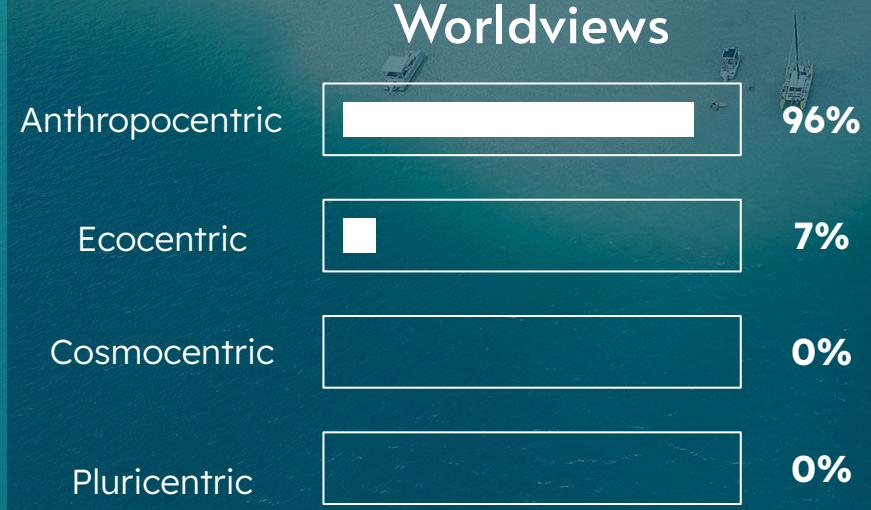

*General moral guiding principles and life goals informed by people's worldviews and beliefs.*

# SYSTEMATIC MAP – VALUE TYPOLOGIES




*Dynamic bodies of knowledge, practices and beliefs, pertaining to the relationship of living beings, including people, with one another and with nature embedded in worldviews*

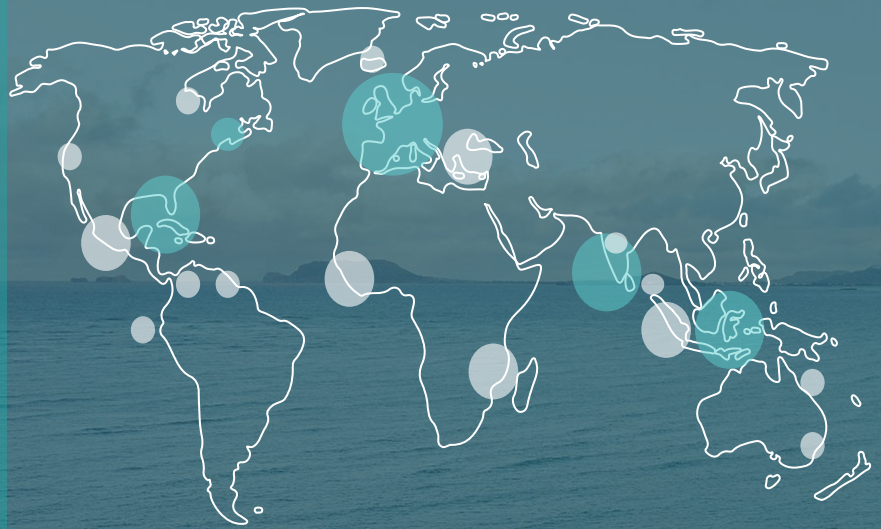
# SYSTEMATIC MAP – VALUE TYPOLOGIES

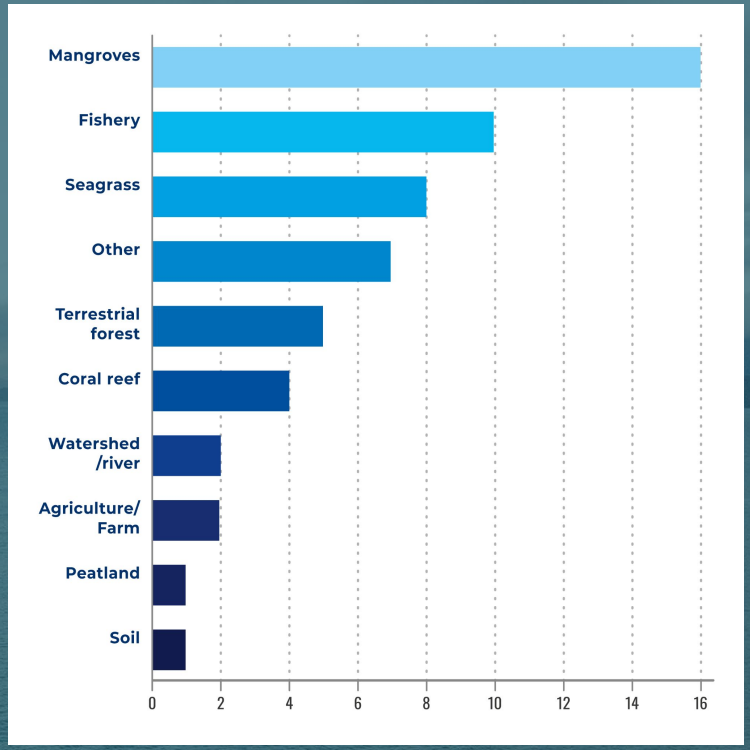



*Embedded in cultures and languages, worldviews shape people's values in their relationships with other people and with nature*

# SURVEY RESULTS –

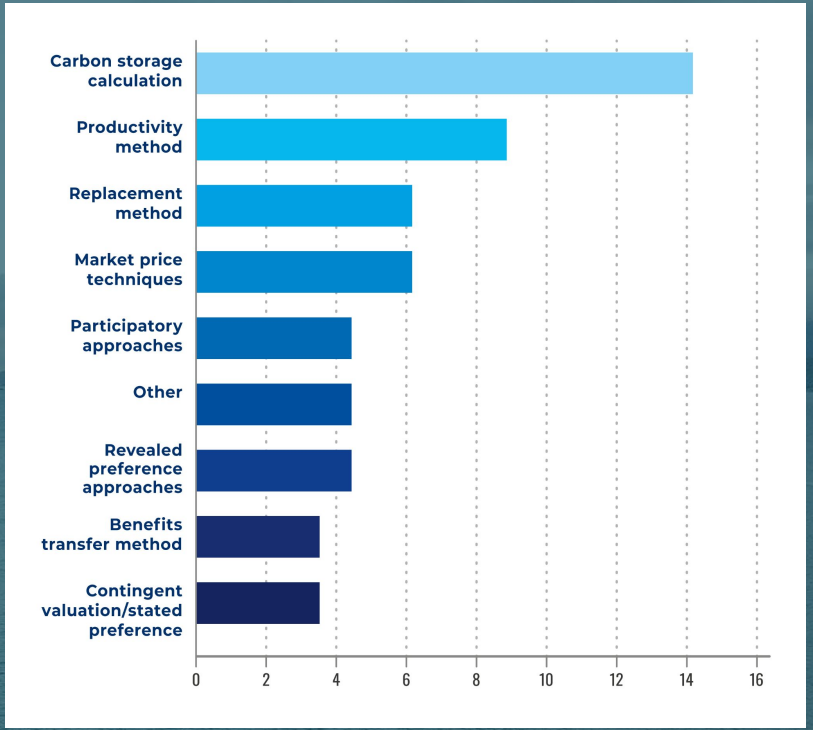
## *GLOBAL & ECOLOGICAL COVERAGE*





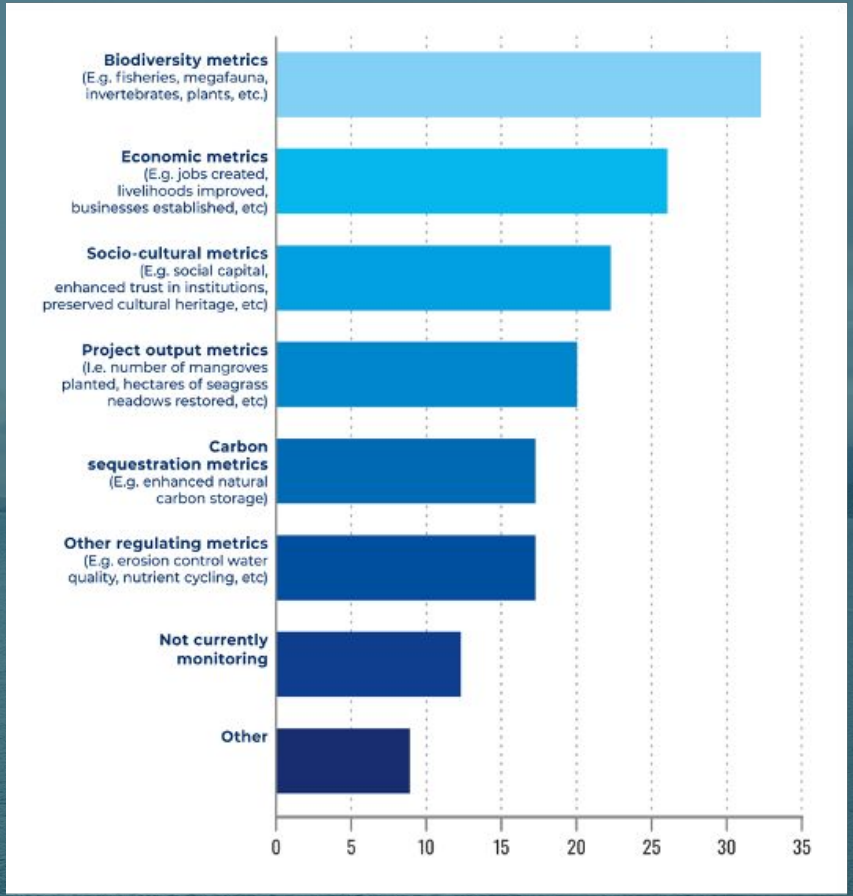
# SURVEY RESULTS –
*VALUATION METHODS*

- Majority used carbon storage calculation or productivity method
- Fewer participatory approaches

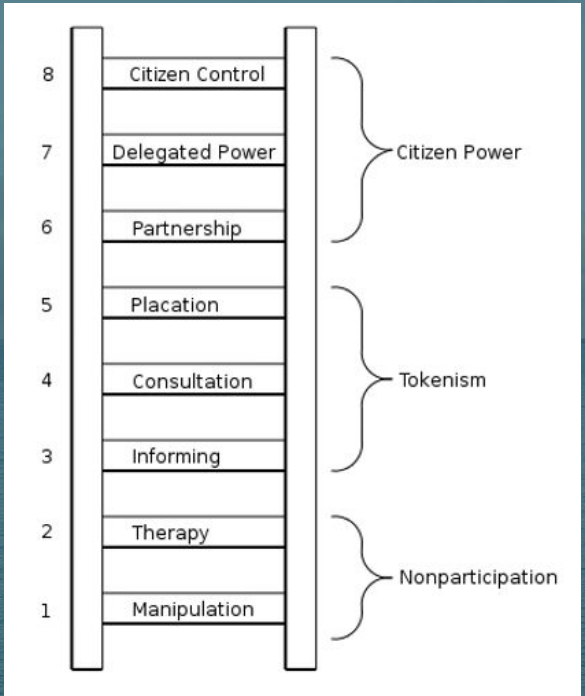


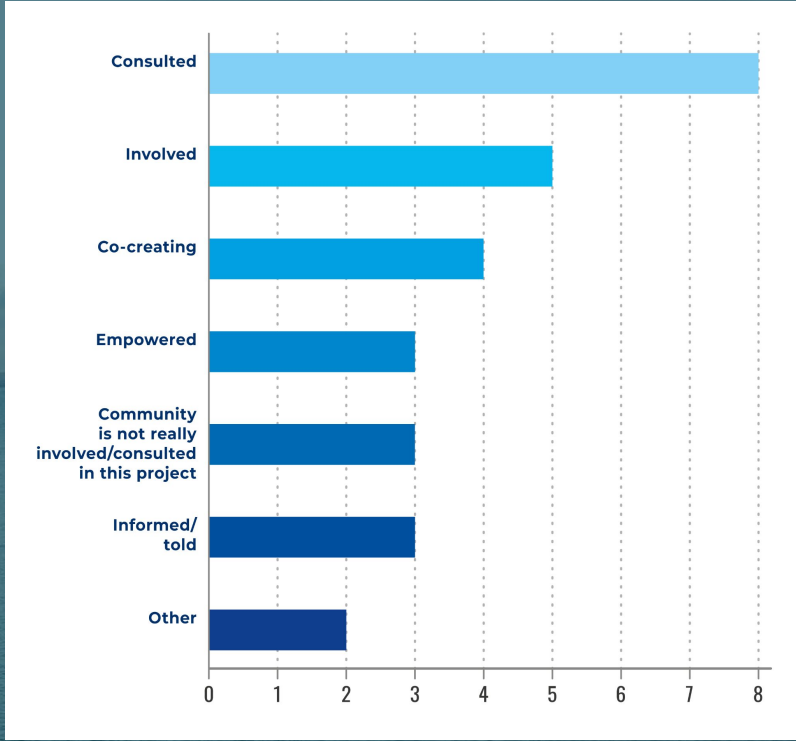
# SURVEY RESULTS -
*PROJECT SUCCESS METRICS*

- Focus on biodiversity and economic metrics
- 38% indicated use of socio-cultural metrics



# SURVEY RESULTS –
## *COMMUNITY PARTICIPATION*



04

# DISCUSSION

OPPORTUNITIES FOR VALUING, FINANCING, AND IMPLEMENTING NATURE-BASED SOLUTIONS

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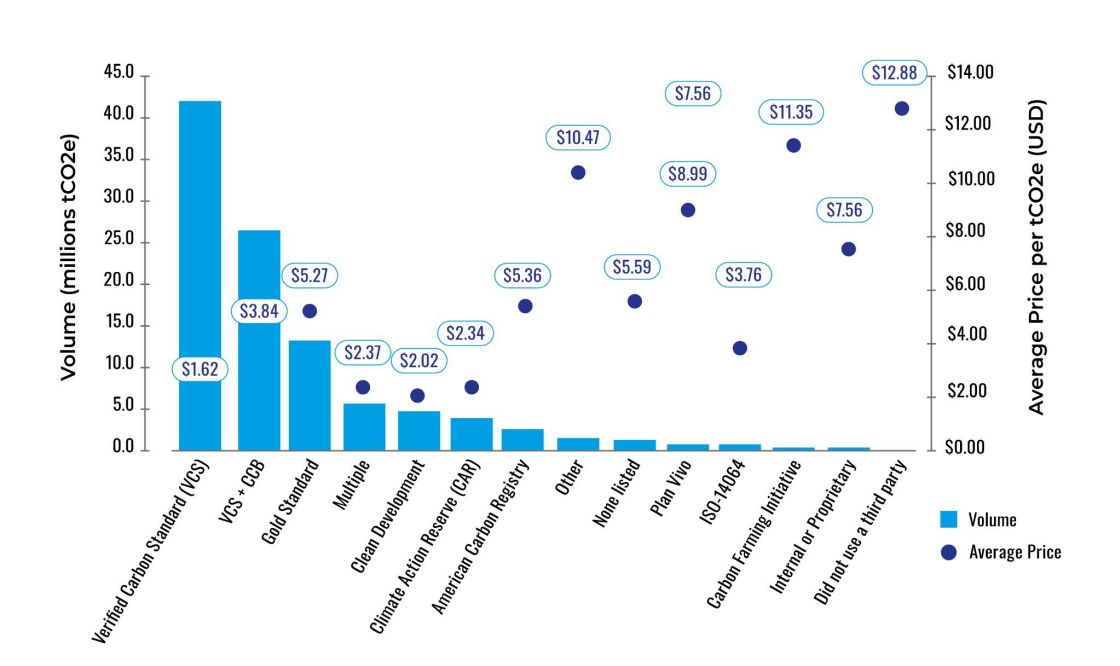
# DISCUSSION -
## *VALUE OPPORTUNITIES*

## Tell the human story - for investors




Experts noted that 'more and more people are willing to drill into what goes into each credit' (10) and that 'investors are looking for high quality products' (1).

*Source: Finance Earth, 2022*

# DISCUSSION -
## *VALUE OPPORTUNITIES*

Tell the human story – for local people and places

- Restoration project in Hawaii resulted in "high personal gratification, strengthened community relationships, and revitalized Hawaiian cultural practices" (Kittinger et al, 2013)
- "Crowding in" intrinsic motivations to participate in PES


*Source: Poe, Norman and Levin, 2014*

# DISCUSSION -
## *VALUE OPPORTUNITIES*

Diverse valuation approaches increase credibility, investability, and local buy-in

*"Demonstration of economic value is a double-edge sword. When it's high, it helps disempowered communities. When it's low, it can be used as a legal weapon against them."*
- Survey Respondent

Seeing valuation 'as a social practice' (Helgesson & Muniesa, 2013) that in turn make 'realities that matter' (Law 2004, 3; see also Latour 2004)

# DISCUSSION -
*FINANCE OPPORTUNITIES*

## Carbon finance may not be the best answer for seagrass

- "**Carbon moratoriums**" beginning in Indonesia, PNG, China, etc
- Ensuring "*science and market aren't moving ahead of the policy*"
- Unlikely to support small-scale seagrass PES projects
- Profit ***only likely*** in a scenario where:
  - Ecosystem is scaled to over **1,000 hectares**;
  - **High carbon price** is commanded; and
  - Start-up and verification **costs are met separately** (UNEP, 2020)
- Conservationists must attune to the conditions under which PES can either crowd out or crowd in intrinsic motivations (requiring explicit engagement with moral, spiritual, and cultural values)

# DISCUSSION -

*FINANCE OPPORTUNITIES*

- Interview and survey results demonstrated the possibility of using carbon as an ancillary benefit while focusing on other values.

- Some projects integrated seagrass PES by estimating carbon storage potential for investors while clarifying that investors are not buying an offset, but rather investing in a community conservation project with a likely carbon benefit

# DISCUSSION -

*IMPLEMENTATION & MONITORING OPPORTUNITIES*

## Projects becoming easier to validate geospatially - but local data will always be needed

*"I often get asked - how do we make money on this [Nature-based Solutions]? And I answer that not all these values can have a price tag put on them. Then they start to look a bit puzzled because we are introducing an entirely new worldview. How we assess values, and how we integrate them into decision making, needs to be more context specific, dependent on actors involved, and depending on outcomes we want to achieve."*

*- Interview Respondent (IPBES Report Author)*

# DISCUSSION -

*IMPLEMENTATION & MONITORING OPPORTUNITIES*

Integrating local values and knowledge systems can ensure "citizen control"

- Examples abound:
  - **Hawaii** - Papahānaumokuākea Marine National Monument Monument—Mai Ka Pō Mai - management plan
  - **New Zealand** - Te Ahu o Rehua protected area network
  - **Indonesia** - *sasi* or 'taboos' in Maluku and Papua, *mane'e* in North Sulawesi

05

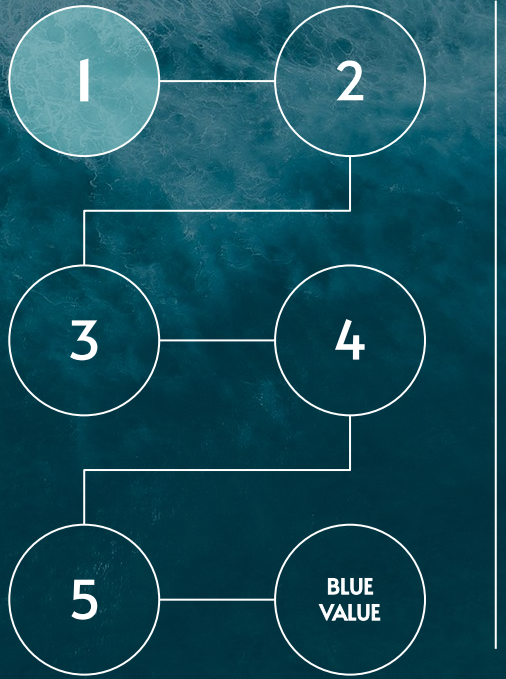
# 5 RECOMMENDATIONS

FOR MOVING FROM “BLUE CARBON” TO “BLUE VALUE”

’22

# Ask the question: Nature-based Solutions *to what*? Solving societal challenges *for whom*?

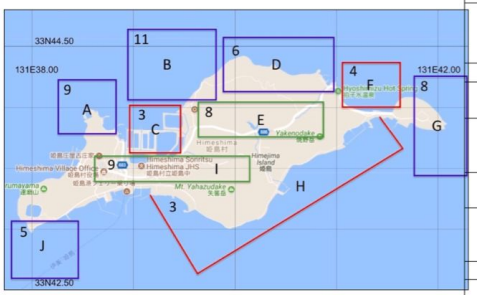
- 66% of country signatories to the Paris Climate Agreement have mentioned NbS as part of their strategy
- Just seventeen countries recognized the combined mitigation and adaptative power of NbS




*Source: Seddon et al., 2020*

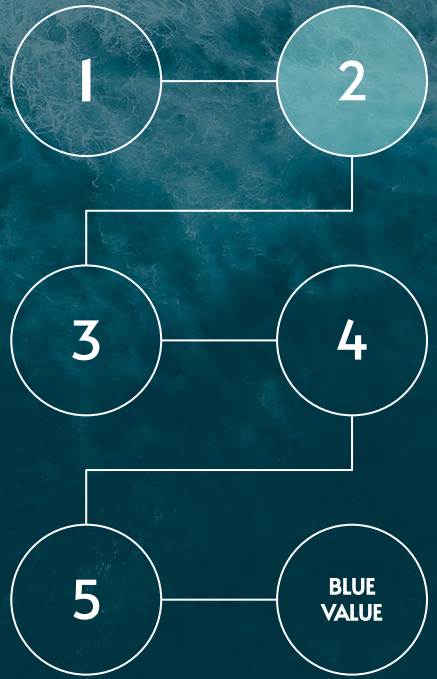
# Begin projects with participatory mapping of Seagrass Ecosystem Services that are most valuable to local communities

- Conducted through 3 key phases: trust building, ranked choice, and mapping




| Legend | Ecosystem Service bundles |
|---|---|
| A | (1) food, (2) genetic resources, (3) aesthetic, (4) education and knowledge, (5) traditional food culture, (6) spiritual and religious, (7) recreation and tourism, (8) habitat provision, (9) erosion control and regulation |
| B | (1) food, (2) genetic resources, (3) aesthetic, (4) cultural heritage, (5) traditional food culture, (6) spiritual and religious, (7) recreation and tourism, (8) island art, (9) habitat provision, (10) erosion control and regulation , (11) soil formation |
| C | (1) food, (2) genetic resources, (3) island art |
| D | (1) food, (2) genetic resources, (3) aesthetic appeal, (4) education and knowledge, (5) traditional food culture, (6) habitat provision |
| E | (1) food, (2) freshwater, (3) cultural heritage, (4) education and knowledge, (5) traditional food culture, (6) habitat provision, (7) erosion control and regulation (8) soil formation |
| F | (1) food, (2) genetic resources, (3) spiritual and religious, (4) traditional food culture |
| G | (1) food, (2) genetic resources, (3) aesthetic, (4) education and knowledge (5) traditional food culture, (6) habitat provision, (7) erosion control and regulation, (8) soil formation |
| H | (1) food, (2) aesthetic, (3) recreation and tourism |
| I | (1) food, (2) recreation and tourism, (3) traditional food culture, (4) spiritual and religious, (5) island art, (6) education and knowledge, (7) habitat provision, (8) soil formation, (9) erosion control and regulation |
| J | (1) food, (2) genetic resources, (3) education and knowledge, (4) traditional food culture, (5) habitat provision |

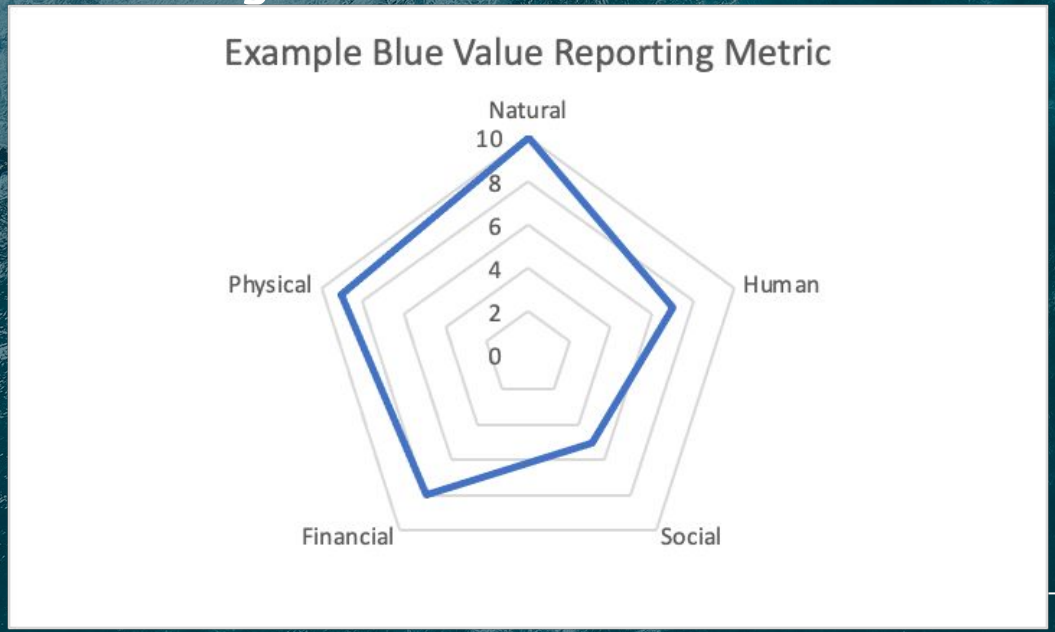
**Fig. 6.** Ecosystem service bundles of Himeshima island.

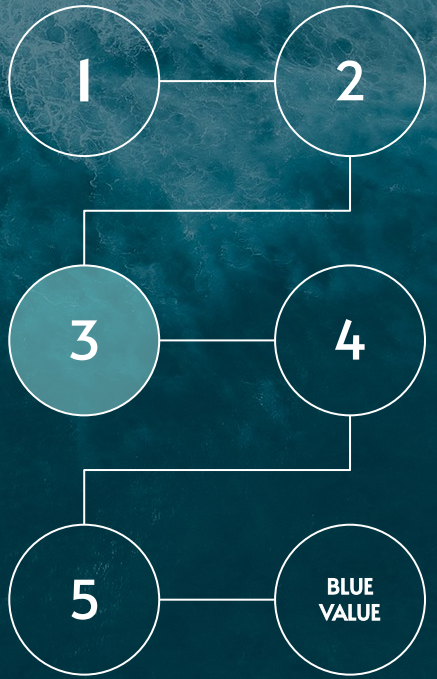


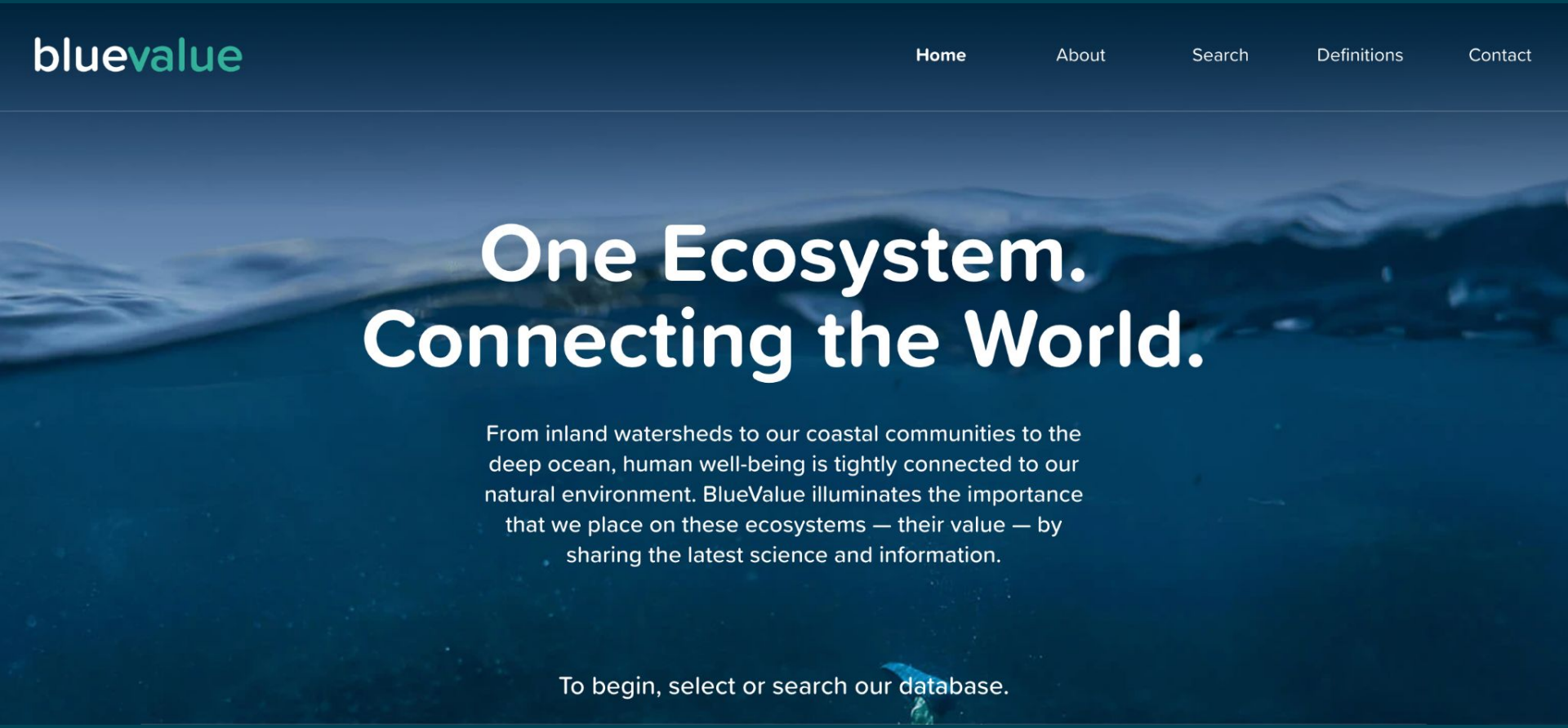

*Source: Chakraborty and Gasparatos (2019)*

# Use these identified Ecosystem Services to align with the values of investors.

- Moving from “capital” to “value”
- Making other values “valuable”

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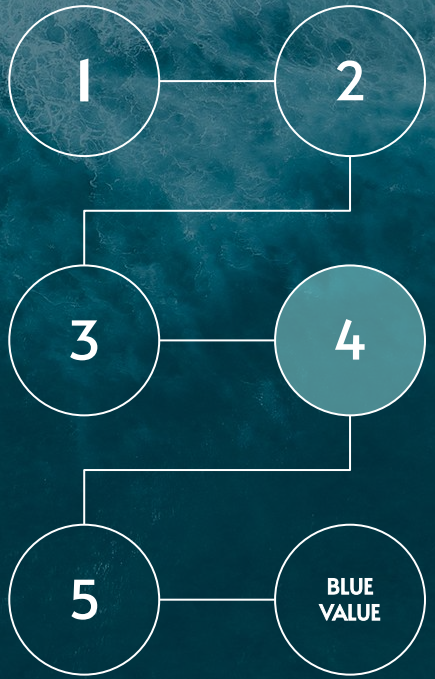
From inland watersheds to our coastal communities to the deep ocean, human well-being is tightly connected to our natural environment. BlueValue illuminates the importance that we place on these ecosystems — their value — by sharing the latest science and information.
To begin, select or search our database.

# Engage communities in project monitoring

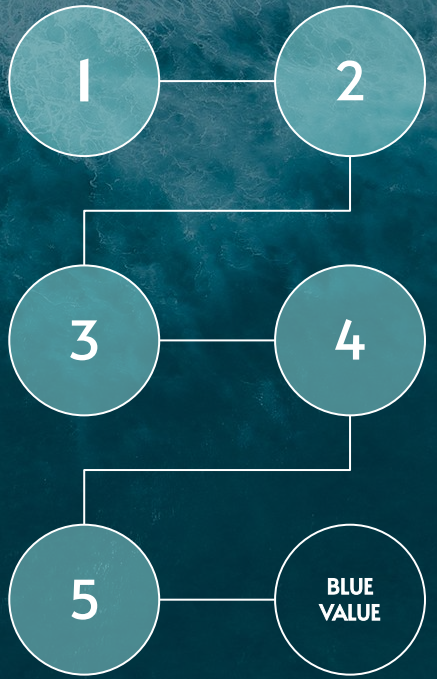
- Provide investors with a “menu” of metrics to choose from, as selected by local communities
- Incorporating storytelling metrics

| SEAGRASS USE VALUES | |
|---|---|
| **Ecosystem Service** | **Description of service (some definitions adapted from BlueValue.com)** |
| **Supporting Services** | **Ecological structures and functions that are essential to the delivery of ecosystem services** |
| Nutrient processing | The cycling of nutrients, including acquisition and storage, within the biosphere. |
| Primary production | The conversion of sunlight into biomass. |
| Pollination and seed dispersal | Movement of plant genes. |
| Geomorphology | Beneficial geomorphology as a result of sediment accretion. |
| Sediment accretion | Sediment accretion in habitats. |
| Habitat | The physical place where organisms reside. |
| Hydrological Cycle | Movement and storage of water through the biosphere. |
| **Regulating Services** | **Maintenance of essential ecological processes and life support systems for human well-being** |
| Gas sequestration, storage, and productic | Regulation of the chemical composition of the atmosphere and oceans. |
| Carbon sequestration | Carbon storage and sequestration resulting in storage of CO2 in biomass. |



# Move from “Blue Carbon” to “Blue Value” to attract initial investors and move towards more rigorous climate financing over time

- “Bundle” seagrass under other carbon projects
- Estimate carbon storage in sale of “Blue Value Credit” - but emphasize the other values the purchase will support & engage communities in monitoring those values



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# CONCLUSION

THE WAY FORWARD FOR SHAPING CONSERVATION LEADERSHIP

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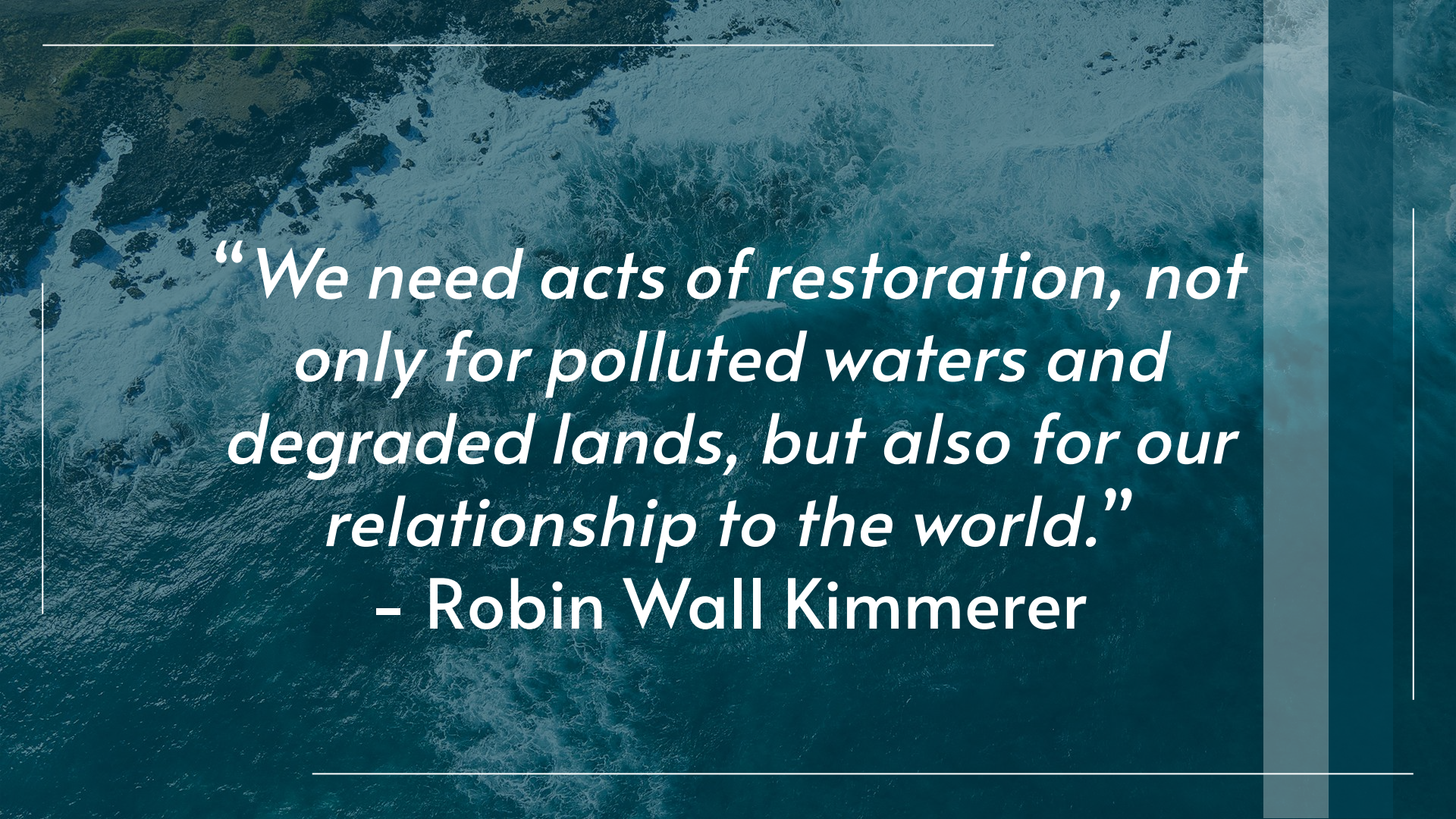
Reflecting on a simple question:

# HOW CAN WE USE OUR VALUES TO MAKE NATURE *VALUABLE?*


“We need acts of restoration, not only for polluted waters and degraded lands, but also for our relationship to the world.”
– Robin Wall Kimmerer

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# Thank you!

Unlocking the Potential of Seagrass Ecosystems through Locally-Led Valuation Approaches

Thank you to co-authors Ryan Lewis and Julian Clifton and placement host Blue Ventures

*Article currently under peer review; I will be happy to distribute to the attendees when published!

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*Photo by Chloe King in the Horsburgh Atoll, Maldives*