Regional Conference on Regional Workshop on
" Enhancing Smallholder Plantations Towards Quality Timber Production of Teak and Other Economic Species and Carbon Neutrality in the Tropics"
18 Sept. 2024

The Nature Futures Framework: Tool to support desirable futures for people, Nature and Mother Earth

Osamu SAITO

Principal Policy Researcher, Institute for Global Environmental Strategies (IGES)/
Visiting Professor, The University of Tokyo

IGES
Institute for Global
Environmental Strategies

東京大学未来ビジョン研究センター
Institute for Future Initiatives
The University of Tokyo

Bio-note

- 2004: Ph.D. (Agriculture) from Tokyo University of Agriculture and Technology (TUAT)
- 2004-2007: Assistant Professor, Osaka University
- 2007-2010: Assistant Professor, Waseda Institute of Advanced Studies, Waseda University
- 2011- 2020: Academic Director/Programme Officer, UNU Institute for the Advanced Study of Sustainability (UNU-IAS)
- 2011 - : Visiting Professor, the University of Tokyo
- 2017 - : Visiting Professor, University of Philippines Open University (UPOU)
- 2020 - : Principal Policy Researcher
- Institute for Global Environmental Strategies (IGES)
- Research field: Landscape ecology, ecosystem assessment and management
- Managing Editor of the *Sustainability Science* journal published by Springer since 2011.
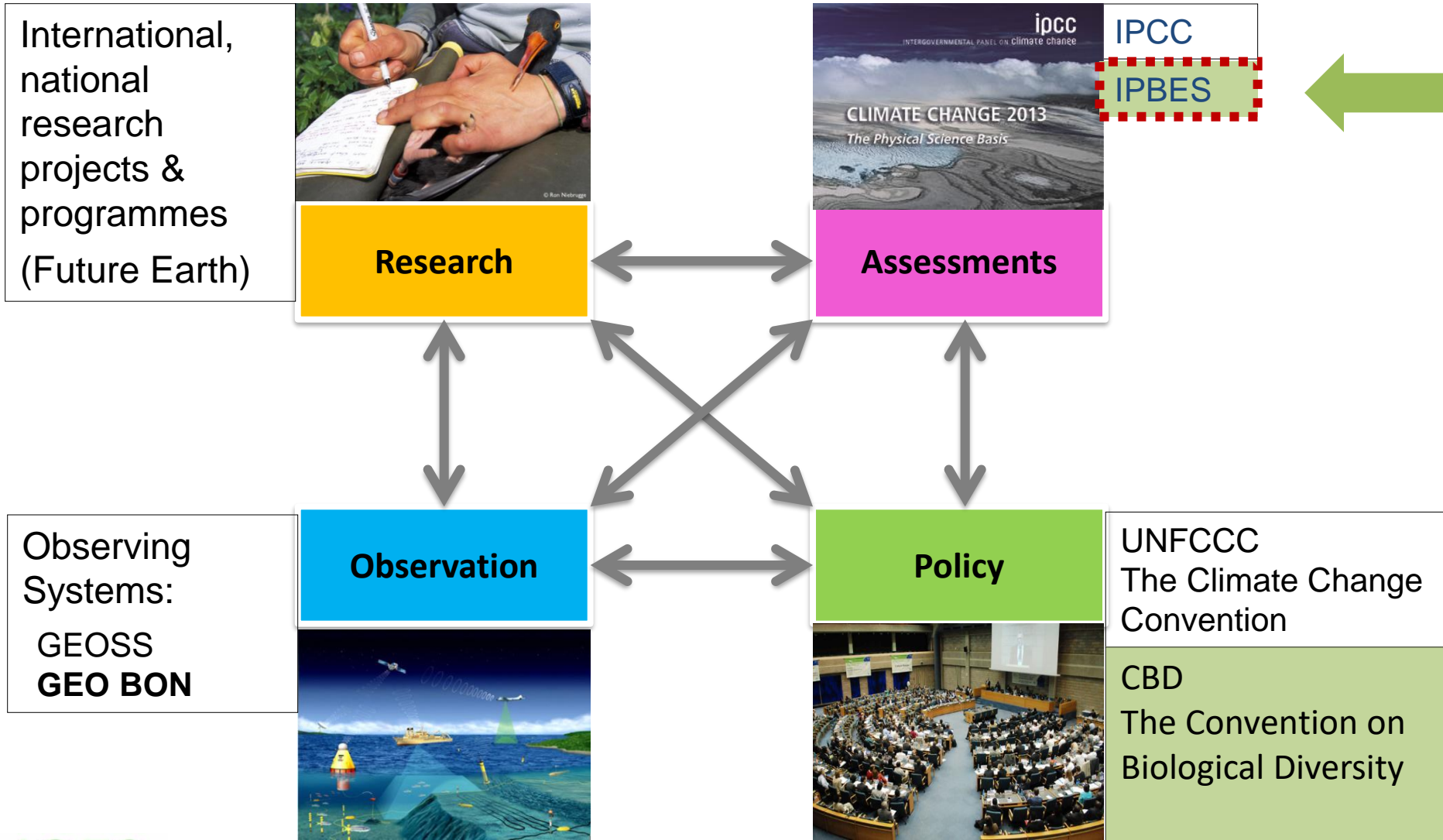
Recent Publications

What is IPBES?

IPBES-3 (Jan 2015, Bonn)

IPBES-2 (Dec 2013, Antalya)

- **I**ntergovernmental science-policy **P**latform on **B**iodiversity and **E**cosystem **S**ervices

- **Overall objective:** To provide policy relevant knowledge on biodiversity and ecosystem services to inform decision making

- Established in April 2012, Panama

- 147 Members

- Secretariat hosted in Bonn

The science-policy niche of IPBES

International, national research projects & programmes (Future Earth)

Research

Assessments

IPCC

IPBES

Observing Systems:

GEOSS
GEO BON

Observation

Policy

UNFCCC
The Climate Change Convention

CBD
The Convention on Biological Diversity

IGES
Institute for Global Environmental Strategies

東京大学未来ビジョン研究センター
Institute for Future Initiatives
The University of Tokyo

Kunming-Montréal Global Biodiversity Framework (KM-GBF)

Cheat sheet overview over the Kunming-Montreal Global Biodiversity Framework. Photo: Vigdis Vandvik

Relations between four functions of IPBES

Policy makers, stakeholders

4. Capacity building

1. Policy support

Requests for information to the plenary

2. Assessments

Gaps

3. Knowledge generation

Scientific & funding communities

Info. flow within IPBES

Info. flow outside the IPBES

IGES
Institute for Global
Environmental Strategies

東京大学未来ビジョン研究センター
Institute for Future Initiatives
The University of Tokyo
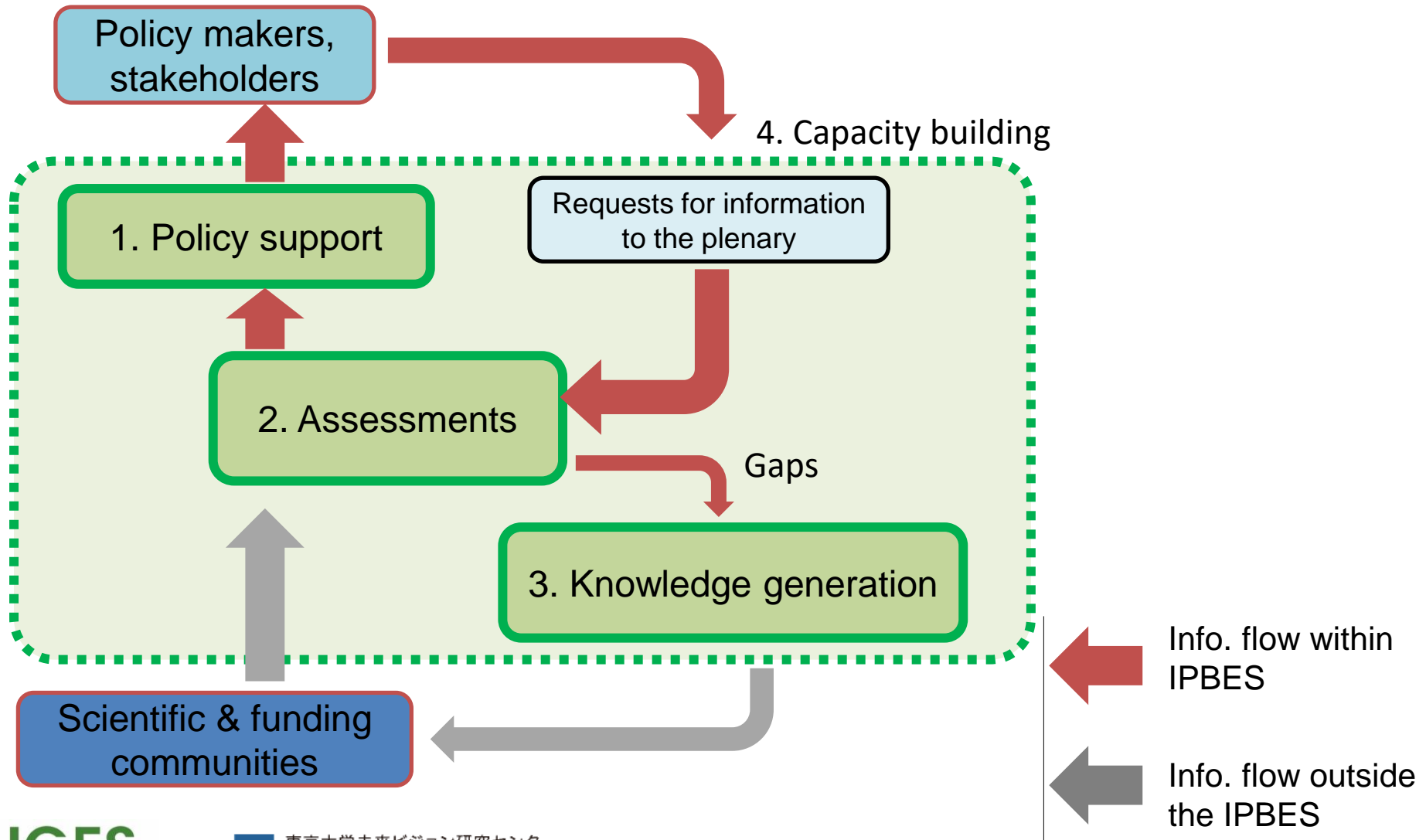
IPBES Conceptual Framework

A **highly simplified model** of the complex interactions between the natural world and human societies (social and ecological system)
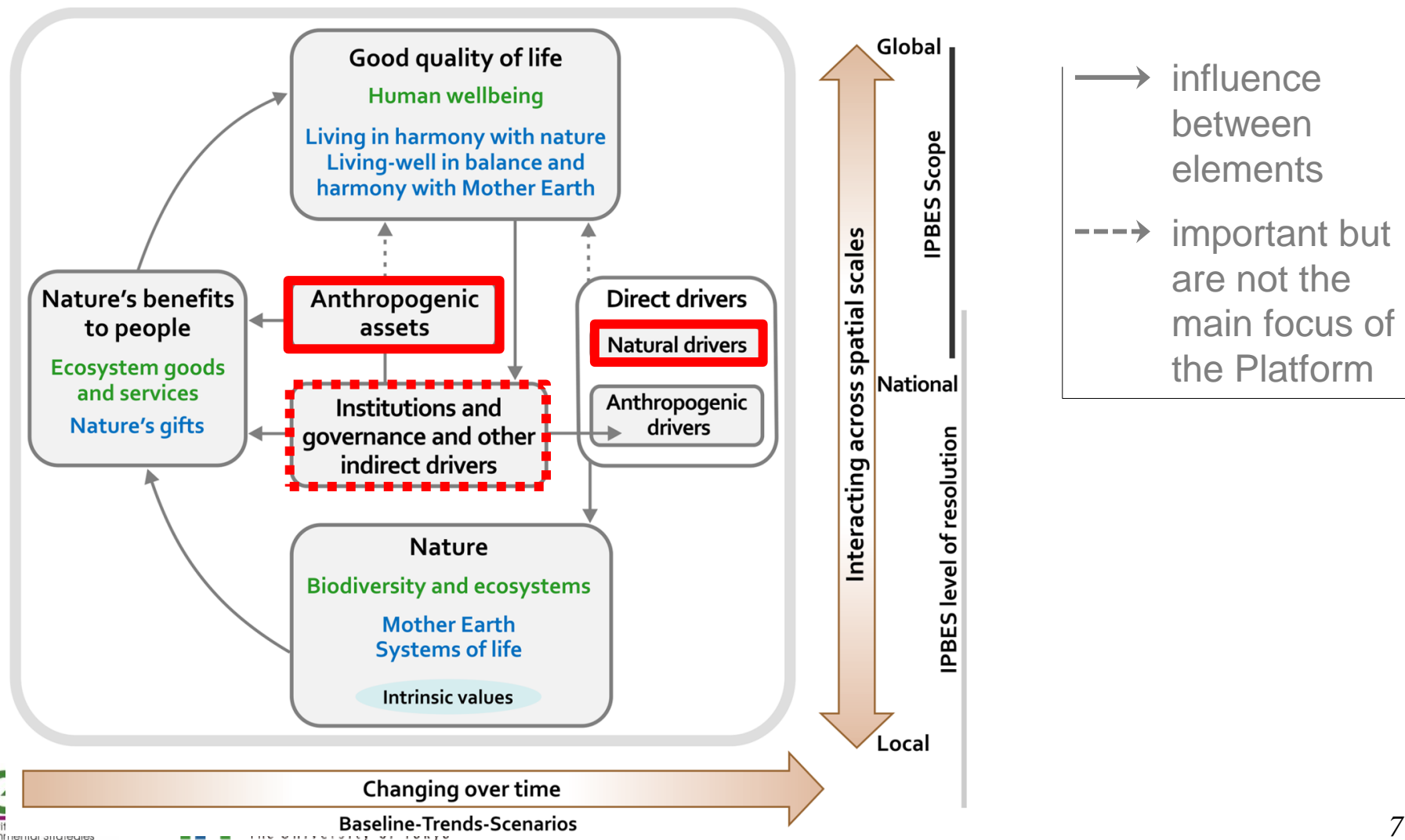A tool for a common and shared understanding **across different disciplines, knowledge systems and stakeholders** that are expected to be active participants in the Platform.

What IPBES has achieved since 2014

Completed assessments:
- Thematic assessment of Pollinators, Pollination and Food Production
- Methodological assessment of scenarios and models of biodiversity and ecosystem services
- Thematic assessment on land degradation and restoration
- 4 Regional/Subregional assessments
  - Africa
  - Americas
  - Asia-Pacific
  - Europe and Central Asia
- Global Assessment
- Policy support tools and methodologies regarding the diverse conceptualization of values of biodiversity and nature's contributions to people including ecosystem services
- Thematic assessment on sustainable use and conservation of biodiversity and strengthening capacities and tools
- Thematic assessment on invasive alien species and their control

Ongoing assessments:
- NEXUS assessment
- Transformative change assessment
- Biodiversity and business assessment

The role of scenarios and models set in the context of the IPBES Conceptual Framework
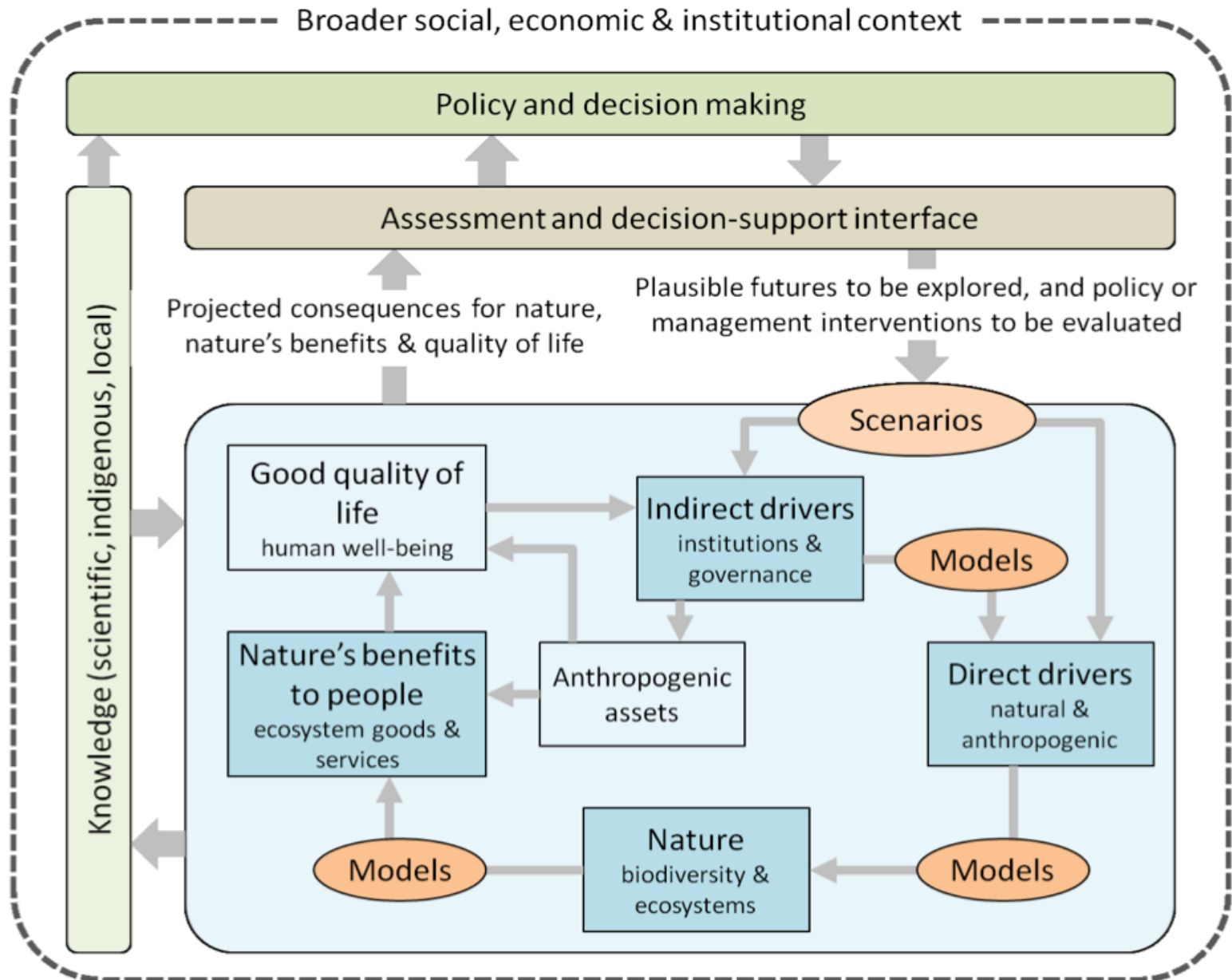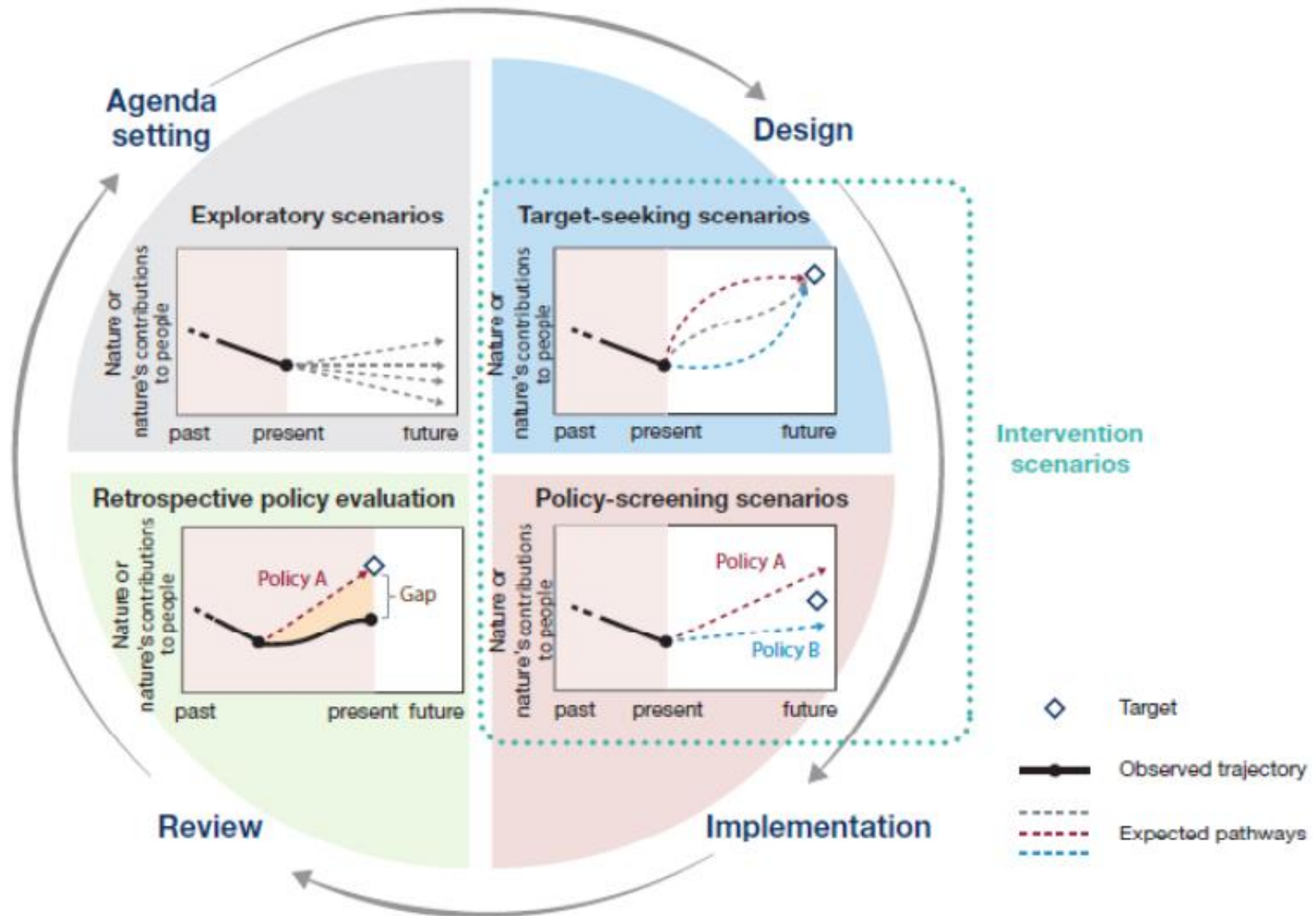
Different types of scenarios corresponding to the major phases of the policy cycle

IPBES Nature Futures Framework (NFF)

NFF was developed by IPBES to facilitate building future scenarios and models desirable futures for people, nature and Mother Earth as a flexible tool for researchers, policy makers, and local stakeholders. The NFF presents three value perspectives of nature in a triangle.

- "Nature for nature" : intrinsic value, and value is placed on the diversity of species, habitats, ecosystems and processes that form the natural world, and on nature's ability to function autonomously.
- "Nature as culture"/"one with nature" : relational values of nature, where societies, cultures, traditions and faiths are intertwined with nature in shaping diverse biocultural landscapes.
- "nature for society" : utilitarian benefits and instrumental values that nature provides to people and societies.
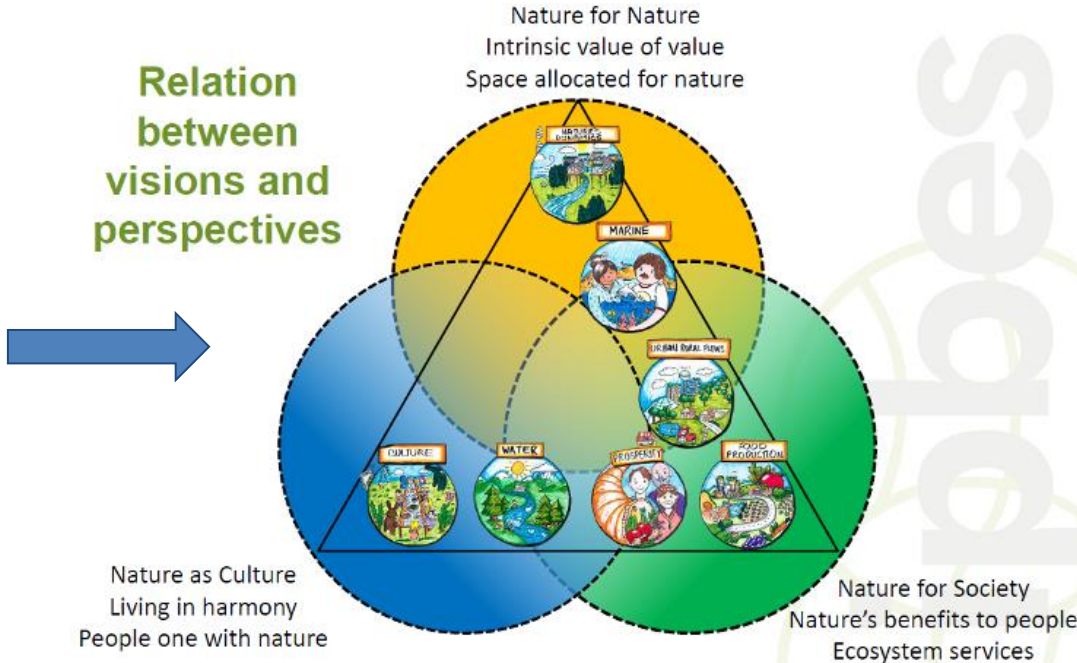
Pereira et al (2020) People and Nature

IPBES(2022)Foundations of the nature futures framework

11

In line with earlier IPBES concept on values

FOCI OF VALUE	TYPES OF VALUE	EXAMPLES
NATURE	Non-anthropocentric (Intrinsic)	Animal welfare/rights
		Gaia, Mother Earth
		Evolutionary and ecological processes
		Genetic diversity, species diversity
NATURE'S CONTRIBUTIONS TO PEOPLE (NCP)	Instrumental (Anthropocentric)	Habitat creation and maintenance, pollination and propagule dispersal, regulation of climate
		Food and feed, energy, materials
	Relational (Anthropocentric)	Physical and experiential interactions with nature, symbolic meaning, inspiration
GOOD QUALITY OF LIFE		Physical, mental, emotional health
		Way of life
		Cultural identity, sense of place
		Social cohesion

Current Opinion in Environmental Sustainability

Pascual et al., 2017, COSUST

Institute for Global Environmental Strategies

Interpretation of NFF (Pereira et al. 2020)

	Marine	Rural	Urban
Nature for Society	Stronger enforcement of laws and regulations as an important step towards achieving the desired vision of plastic-free, healthy oceans, serving as a source of jobs and clean energy	The potential contribution of blockchain technology and the adaptation of agricultural practices to overcoming some of the negative drivers such as bad practices in agricultural production	The need for a circular economy, increased blue/green infrastructure, ecotourism and incentives for urban farming, which would require alignment of priorities across different institutions charged with urban planning
Nature for Nature	Ideal future is one of healthy oceans, healthy coastlines and healthy ecosystems, but corruption and overfishing are major impediments to this realization	There is a possibility of envisioning a future that excludes humans from rural areas (Half Earth), but the preferred focus is how to achieve a well-functioning ecosystem with clean air and water. A decrease in monocultures and pollution are ways to contribute to this goal	Sustainable cities with organic local food production and increased overall connectivity with nature as the desirable future, which would require new laws tax reforms, and better spatial planning to ensure connectivity between rural and urban areas
Nature as Culture	People's perception of oceans as being the root of sustainability problems, and the need to shift away from seeing oceans as a property that can be exploited as amusement parks, and instead revive the spiritual connections with them	The need for a change in lifestyle and education, and better management, with more food diversity, eco-friendly farming and increased engagement of youth. The role of technology in overcoming these challenges, and closing the gap between urban and rural areas is key	More equity in access to biodiverse urban spaces, green buildings and community gardens. There is a need for new social norms, mindsets and standard-setting initiatives that connect cities to nature

Imagining Urban landscapes
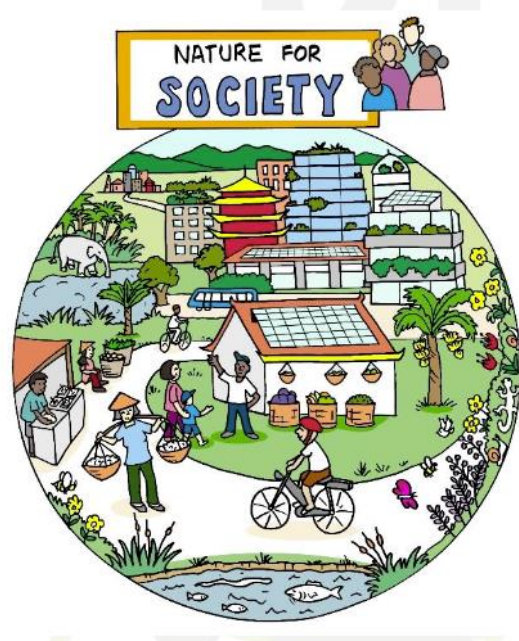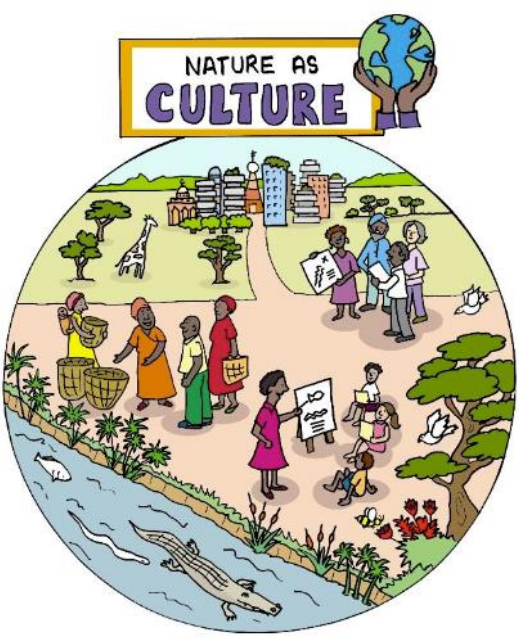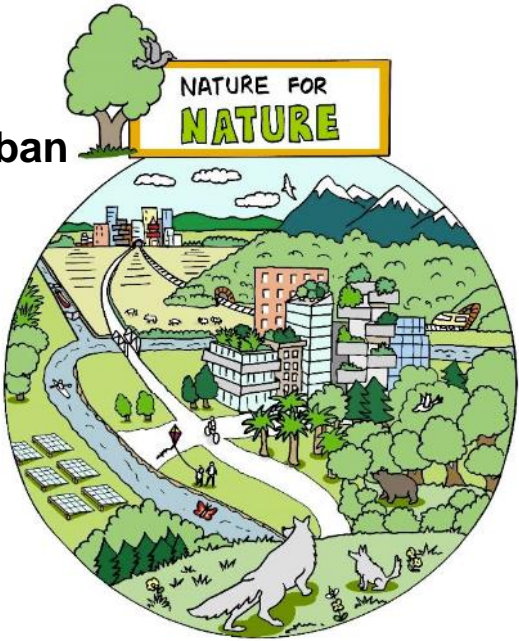
NATURE FOR NATURE

NATURE AS CULTURE

NATURE FOR SOCIETY

Lundquist et al. (Unpublished manuscript). A pluralistic Nature Futures Framework for policy and action.

Graphic illustration by Mary Brake

Imagining Rural landscapes

NATURE FOR NATURE

NATURE AS CULTURE

NATURE FOR SOCIETY

Graphic illustration by Mary Brake

IGES
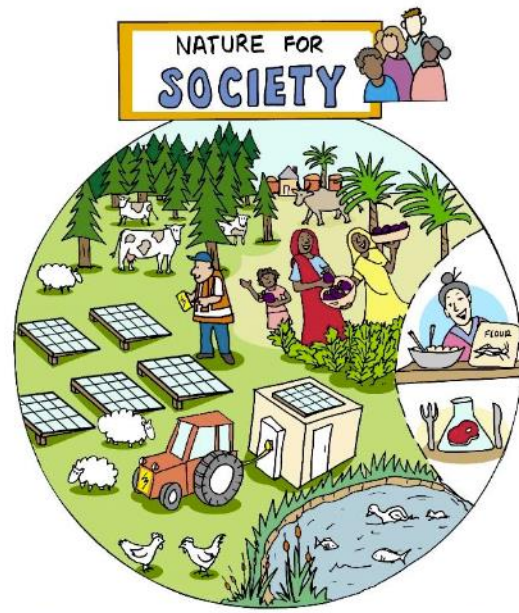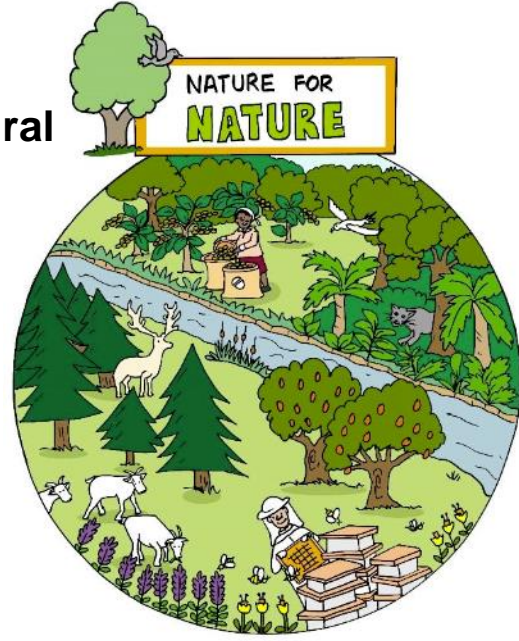Institute for Global
Environmental Strategies

Imagining Ocean landscapes

Lundquist et al. (Unpublished manuscript). A pluralistic Nature Futures Framework for policy and action.

Graphic illustration by Mary Brake

Narratives/Storylines

The illustrative narratives were created at the corners and edges of the NFF so that they are clearly different while still all holding nature at the core
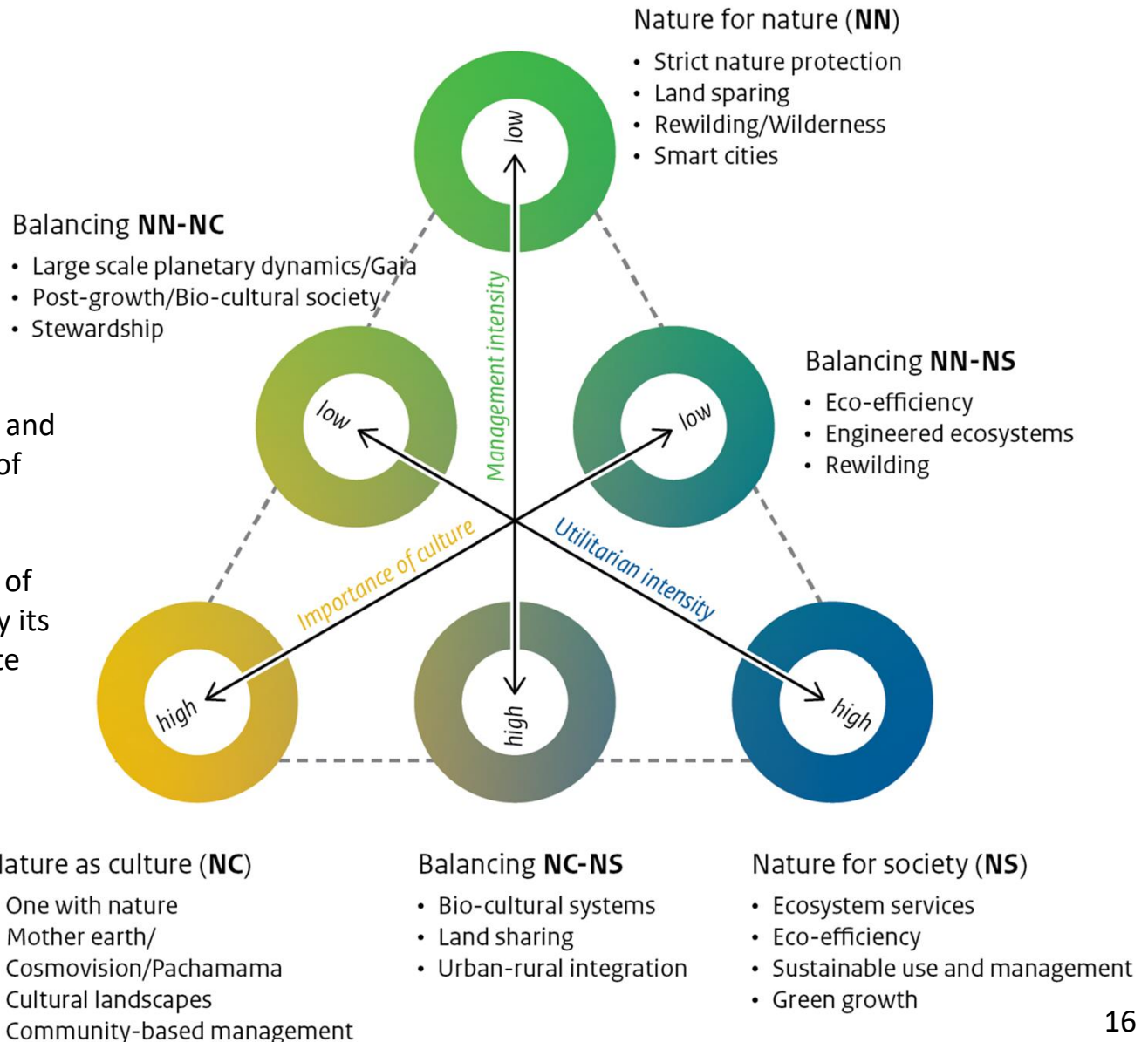
Value perspective locations (circles) and descriptive characteristics (bullets) of the illustrative narratives. These scenario skeletons lay within a fully relational space (axes); the position of each scenario skeleton is dictated by its relation to the adjacent and opposite one.
Adapted from Kim et al. (2021)

Nature for nature (NN)
- Strict nature protection
- Land sparing
- Rewilding/Wilderness
- Smart cities

Balancing NN-NC
- Large scale planetary dynamics/Gaia
- Post-growth/Bio-cultural society
- Stewardship

Balancing NN-NS
- Eco-efficiency
- Engineered ecosystems
- Rewilding

Nature as culture (NC)
- One with nature
- Mother earth/ Cosmovision/Pachamama
- Cultural landscapes
- Community-based management

Balancing NC-NS
- Bio-cultural systems
- Land sharing
- Urban-rural integration

Nature for society (NS)
- Ecosystem services
- Eco-efficiency
- Sustainable use and management
- Green growth

Management intensity
Importance of culture
Utilitarian intensity

IGES
Institute for Global Environmental Strategies

東京大学未来
Institute for
The Universi

16

Overview of scenario skeletons and associated nature value perspectives

Title	Value persp.	Two-line summary	Key words[a]
Arcology	Nature for Nature (NN)	People respect and value all life on Earth intrinsically. This world is characterised by extreme land sparing, as vast areas of land and sea are strictly protected. People live in dense self-sustaining urban areas designed to minimise the influence of people in the biosphere	Planetary stewardship, post-growth, smart cities, blue-green infrastructure, protected area, large-scale ecological dynamics, rewilding, self-sufficient settlements
Sharing through Sparing	Balancing Nature for Nature and Nature for Society (NN–NS)	People have a fairly strong use orientation towards nature, but also value and protect the self-regulating capacity of the biosphere as biodiversity and natural processes provide the resilience that enables humanity to stay within planetary boundaries. While sparing space for nature, remaining areas are used intensively, but efficiently and sustainably	Eco-efficiency, green growth, blue-green infrastructure, urban–rural integration, optimised ecosystem services, protected area, engineered ecosystems, rewilding
Optimising Nature	Nature for Society (NS)	A highly connected world that shares knowledge and technology to maximise efficient and sustainable utilisation of nature's contributions to people while ensuring maintenance of the key ecosystem functions that support them	Eco-efficiency, green growth, smart cities, urban–rural integration, land sharing, optimised ecosystem services, engineered ecosystems
Innovative Commons	Balancing Nature for Society and Nature as Culture (NC–NS)	People have built a world of innovative ecological commons and live in interconnected blue-green cities and rural settlements across land- and seascapes. People use their local and traditional knowledge, and technology, to manage and expand the use of ecosystems and biodiversity also to enhance their culture	Bio-cultural heritage, commons, post-growth, blue-green infrastructure, urban–rural integration, cultural landscapes, land sharing, optimised ecosystem services
Reciprocal Stewardship	Nature as Culture (NC)	In this world, values of reciprocity and harmony structure peoples' relationships with nature at all levels of human organisation. Biological and cultural diversity are co-conserved and co-managed across a wide range of interconnected bio-cultural systems	Bio-cultural heritage, stewardship, commons, post-growth, cultural landscapes, engineered ecosystems, self-sufficient settlements
Dynamic Natures	Balancing Nature for Nature and Nature as Culture (NN–NC)	Dynamic, connected and biodiverse ecosystems are valued to allow traditional socio-cultural reproduction, spiritual values and connections to be re-established and new ones to be shaped. Society accommodates the dynamism of nature through both traditional and innovative lifestyles that takes into consideration cultural heritage and traditional ecological knowledge	Planetary stewardship, post-growth, urban–rural integration, engineered ecosystems, large-scale ecological dynamics, rewilding, self-sufficient settlements

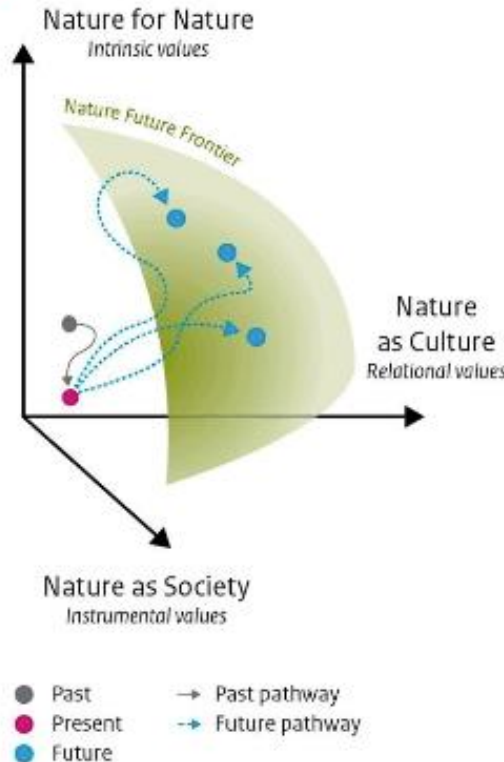Durán et al. (2023)

17

Modelling
(simulate plausible future)

(a)Nature Futures state space with multiple pathways (blue dotted non-linear paths) to the Frontier (green convex with blue dots) where all three value perspectives improve relative to the present.

(a)Nature Futures policy space with example policies for the three nature value perspectives and the overlapping presence of these values illustrated by blue, yellow and orange triangles.

(Kim et al., 2023)

Pathways to Nature Future Frontier in state and policy space

a) Nature Futures state space

Nature for Nature
Intrinsic values

Nature Future Frontier

Nature as Culture
Relational values

Nature as Society
Instrumental values

- ● Past
- ● Present
- ● Future
- → Past pathway
- ⇢ Future pathway

b) Nature Futures policy space

Nature for Nature

Protected area to protect nature for itself
(e.g., strict protection, closing the High Seas from bottom trawling)

Nature as Culture

Protected area to maintain the relationship and heritage between communities and their surrounded environment
(e.g., cultural landscape, World Heritage Sites)

Nature for Society

Protected area to protect the delivery of ecosystem services by nature
(e.g., sustainable use, Biosphere reserves buffer zone and transition zone)

IGES
Institute for Global Environmental Strategies

東京大学未来ビジョン研究センター
Institute for Future Initiatives
The University of Tokyo

Indicators

- Indicators can be identified across the elements of the IPBES conceptual framework and across the three NFF specific value perspectives in the context of the focal research or policy question
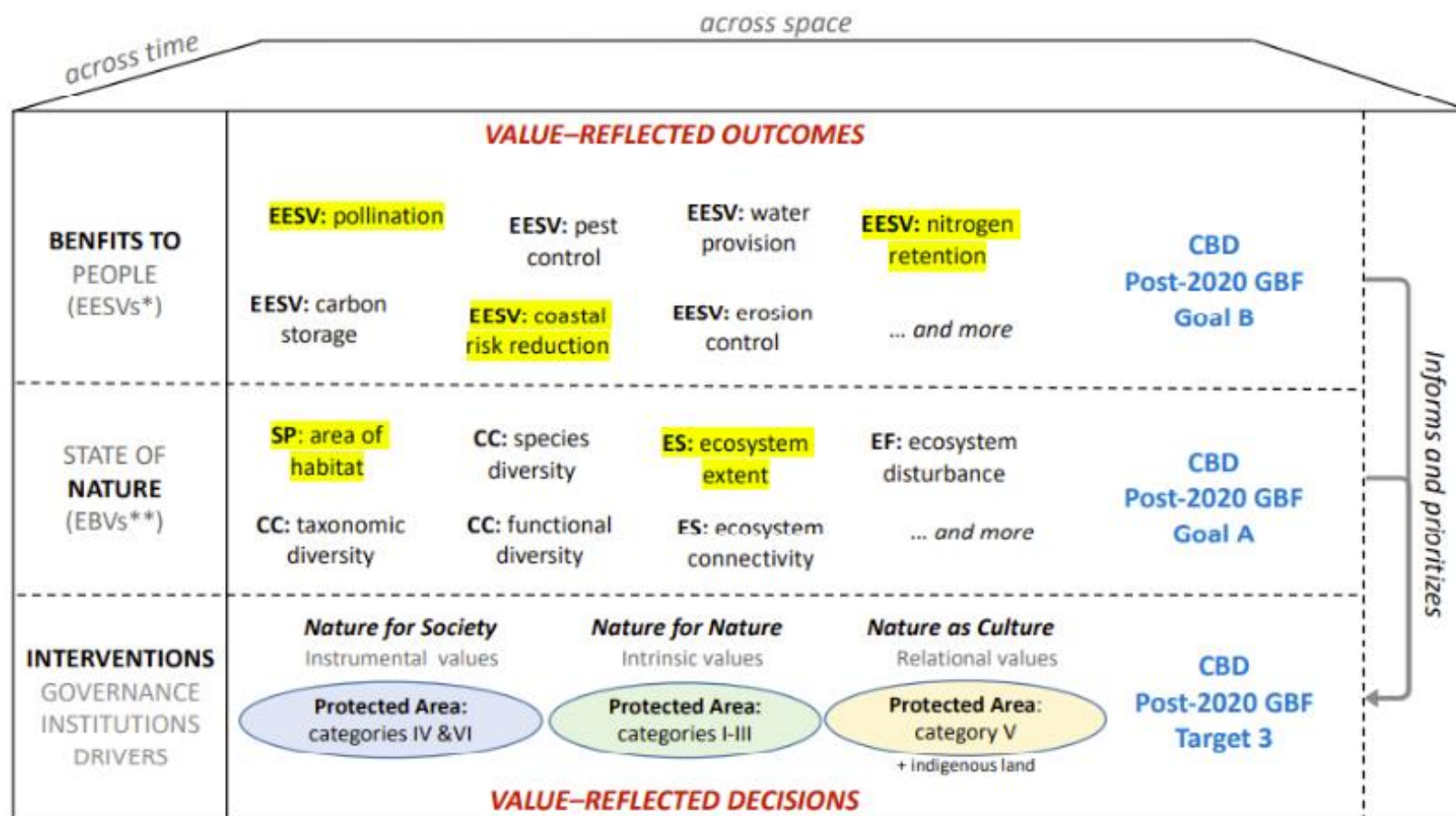- The specific value perspectives for nature are mapped to different categories of protected areas (Kunming-Montreal Global Biodiversity Framework Target 3).
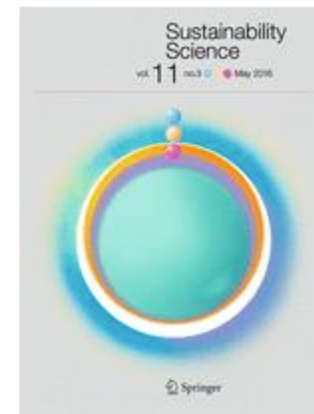

*Essential Ecosystem Services Variables
*Essential Biodiversity Variables - SP: Species population, CC: Community composition, ES: Ecosystem structure, EF: Ecosystem functions

Kim et al. (2022)

19

Sustainability Science
All Volumes & Issues

Special Feature: Operationalizing the Nature Futures Framework to Catalyze the Development of Nature-Future Scenarios

https://link.springer.com/journal/11625/topicalCollection/AC_8a3b18b124a5aea1f9c3e20bfb882f58/page/1

In this topical collection (11 articles)

Special Feature: Original Article

New paths for modelling freshwater nature futures
Lilith Kramer, Sven Teurlincx, Brenda Rashleigh…

» Download PDF (1393KB)   » View Article   Pages 1-19

Special Feature: Original Article

Degrowth scenarios for biodiversity? Key methodological steps and a call for collaboration
Iago Otero, Stanislas Rigal, Laura Pereira, HyeJin Kim…

» Download PDF (3829KB)   » View Article   Pages 1-20

Special Feature: Original Article

Modeling desirable futures at local scale by combining the nature futures framework and multi-objective optimization
Chihiro Haga, Marimi Maeda, Wataru Hotta, Takanori Matsui…

» Download PDF (4930KB)   » View Article   Pages 1-21

SPECIAL FEATURE: ORIGINAL ARTICLE

Operationalizing the Nature Futures Framework to Catalyze the Development of Nature-Future Scenarios

Modeling desirable futures at local scale by combining the nature futures framework and multi-objective optimization

Chihiro Haga[1] · Marimi Maeda[1,2] · Wataru Hotta[3] · Takanori Matsui[1] · Masahiro Nakaoka[4] · Junko Morimoto[3] · Hideaki Shibata[3] · Shizuka Hashimoto[5] · Osamu Saito[6] · Sana Okayasu[7] · HyeJin Kim[8] · Garry Peterson[9]

Case study site:
Bekambeushi-river Basin in Northeastern Japan

Biodiversity Center of Japan (2017). *GIS Data of 1:25,000 Scale Vegetation Map.* Available online at http://gis.biodic.go.jp/webgis/

Pasutureland & Dairy Farming

Bekambeushi River Wetland (Ramsar)

Fishery in Akkeshi Bay
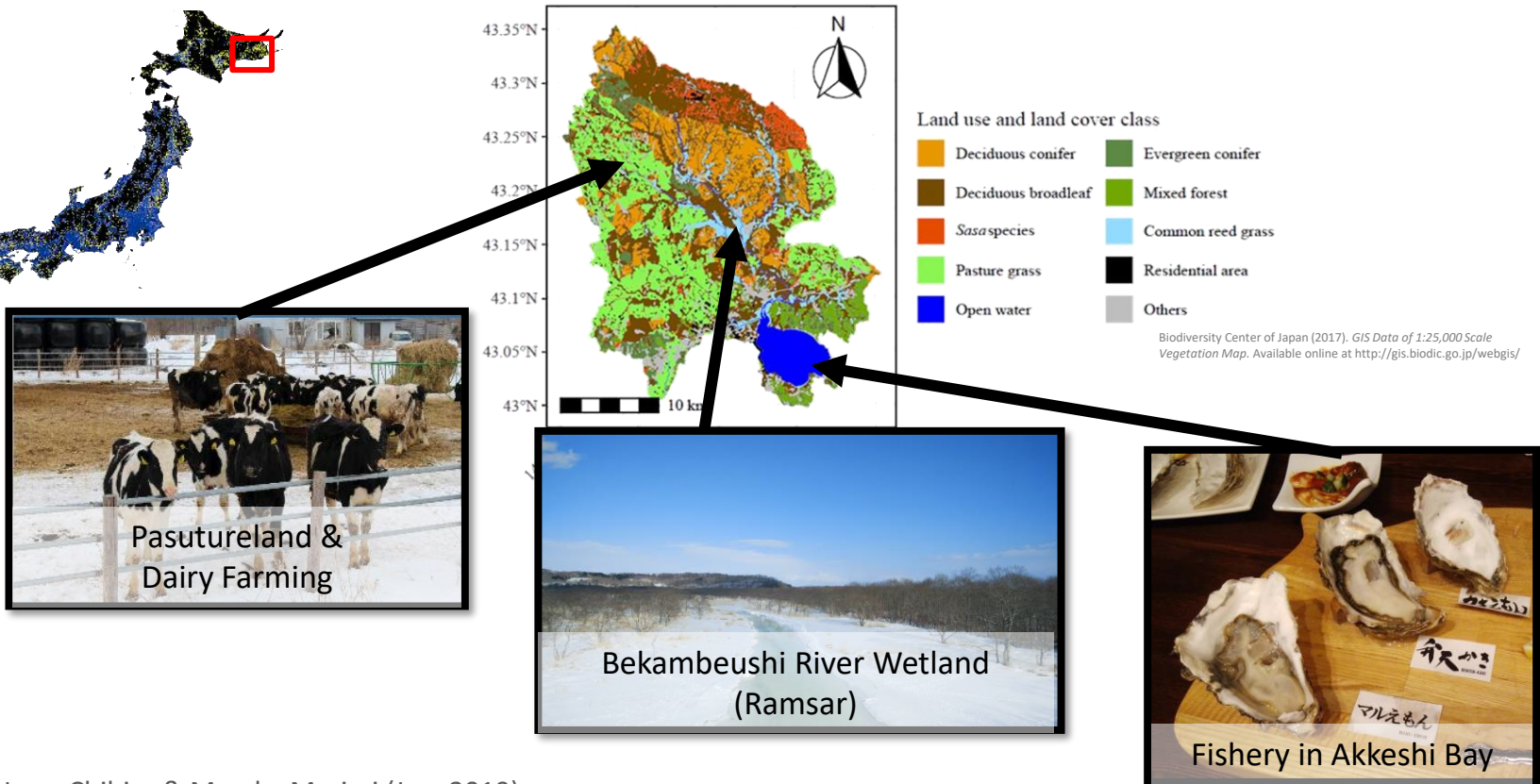
Photo: Haga, Chihiro & Maeda, Marimi (Jan, 2019)

IGES
Institute for Global Environmental Strategies

東京大学未来ビジョン研究センター
Institute for Future Initiatives
The University of Tokyo
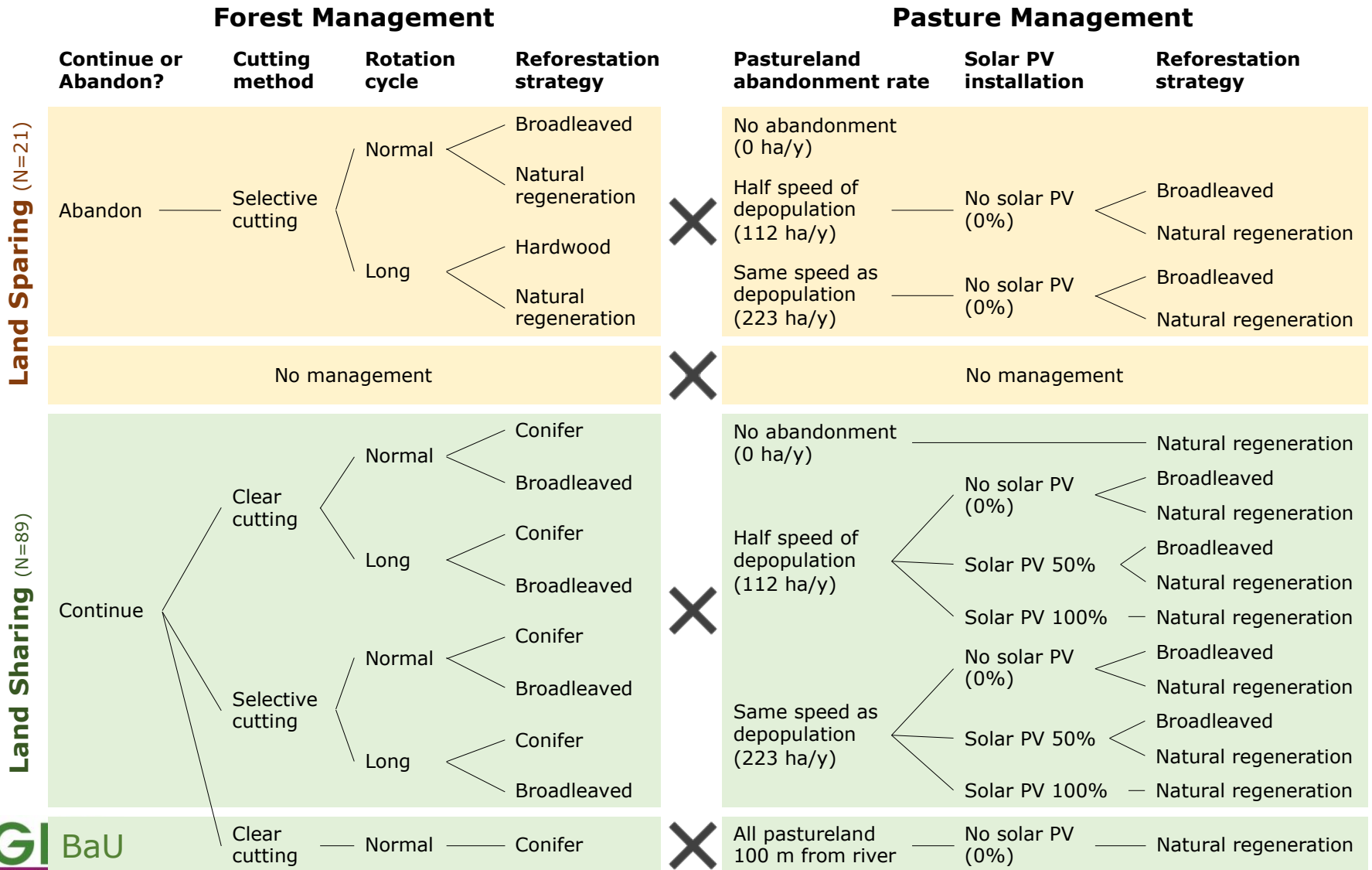
15 Indicators to Evaluate Plural Values of Naturre

Category	Vision	Value	Indicator which can be calculated from LANDIS-II output
Common	Basic landscape structure and ecosystem functions are preserved	Landscape structure	Dissimilarity based Satoyama Index (Yoshioka et al. 2017)
			Proportion of non-artificial landscapes within the study area
		Regulating NCP	Net Ecosystem Productivity (NEP)
Constraint		Biomass	Total tree aboveground biomass within the study area (g-dry weight)
		Diversity of plant species	Simpson's diversity index of tree aboveground biomass within the study area
Nature for Nature	Restoring to a pristine natural environment	Habitat suitability of rare birds (fauna)	Spatial mean of Blakiston's fish owl's HSI (Yoshii et al. 2018)
			Spatial mean of Mountain hawk eagle's HSI (Itoh et al. 2012)
		Native tree species biomass (flora)	Total biomass of native tree species within the watershed (g-dry weight)
Nature for Society	Maximizing provisioning service	Yield of Agriculture and Forestry	Annual pasture yield (g-dry weight/y)
			Annual timber yield (g-dry weight/y)
		Energy Production	Annual potential of biomass energy production (J/y)
			Annual potential of solar energy production (J/y)
Nature as Culture	Maintain the landscape structure that supports the identities and livelihoods	Supporting identities & Learning and inspiration	The proportion of natural landscapes within viewshed in residential areas and roads
		Physical and psychological experiences	The proportion of natural landscapes within viewshed from natural tourism resources
Objective		Regulation of water quality for fishery	Biomass of riparian forest (g-dry weight)

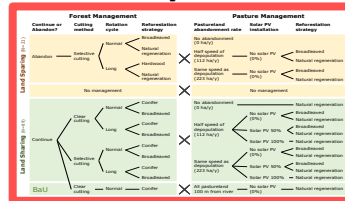Key Point: Identify indicators to evaluate plural values of nature by hearing / literature survey

IGES
Institute for Global
Environmental Strategies

東京大学未来ビジョン研究センター
Institute for Future Initiatives
The University of Tokyo

110 plausible landscape management strategies

The combinations of forest and pastureland management cases.

Forest Management					Pasture Management		
Continue or Abandon?	**Cutting method**	**Rotation cycle**	**Reforestation strategy**		**Pastureland abandonment rate**	**Solar PV installation**	**Reforestation strategy**

Land Sparing (N=21)

Abandon	Selective cutting	Normal	Broadleaved / Natural regeneration	✕	No abandonment (0 ha/y)		Broadleaved / Natural regeneration
		Long	Hardwood / Natural regeneration		Half speed of depopulation (112 ha/y)	No solar PV (0%)	
					Same speed as depopulation (223 ha/y)	No solar PV (0%)	Broadleaved / Natural regeneration
No management				✕	No management		

Land Sharing (N=89)

Continue	Clear cutting	Normal	Conifer / Broadleaved	✕	No abandonment (0 ha/y)		Natural regeneration
		Long	Conifer / Broadleaved		Half speed of depopulation (112 ha/y)	No solar PV (0%)	Broadleaved / Natural regeneration
	Selective cutting	Normal	Conifer / Broadleaved			Solar PV 50%	Broadleaved / Natural regeneration
		Long	Conifer / Broadleaved			Solar PV 100%	Natural regeneration
					Same speed as depopulation (223 ha/y)	No solar PV (0%)	Broadleaved / Natural regeneration
						Solar PV 50%	Broadleaved / Natural regeneration
						Solar PV 100%	Natural regeneration
	Clear cutting	Normal	Conifer	✕	All pastureland 100 m from river	No solar PV (0%)	Natural regeneration

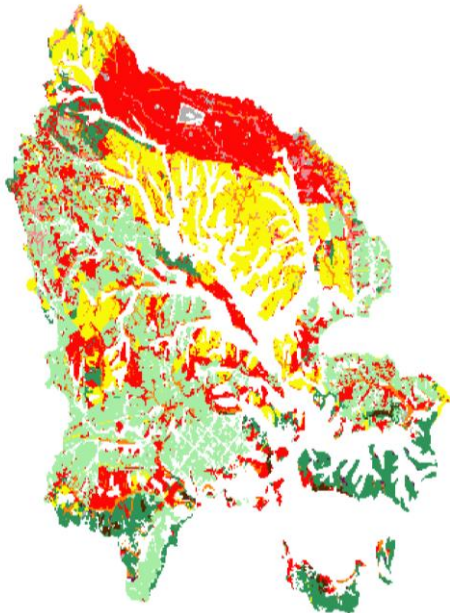# Landscape Change Simulation
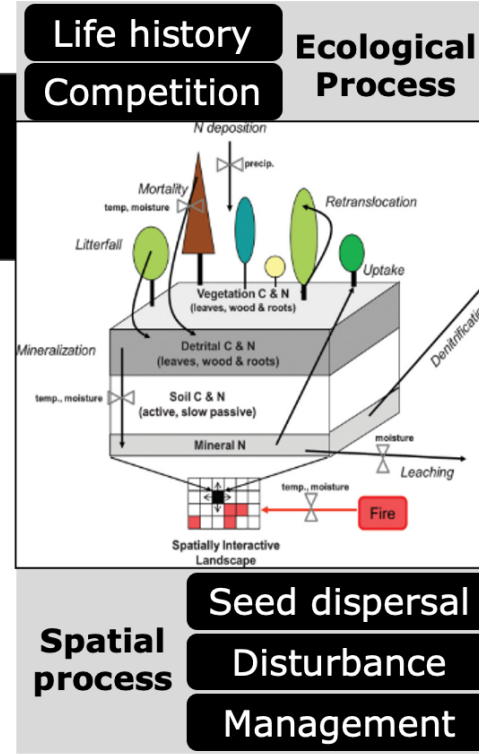
Figure is modified from Lucash et al. (2014).
Lucash MS, Scheller RM, Kretchun AM, et al (2014) Impacts of fire and climate change on long-term nitrogen availability and forest productivity in the New Jersey Pine Barrens. Canadian journal of forest research 44:404–412

Result 1. Time-series of NFF indicators
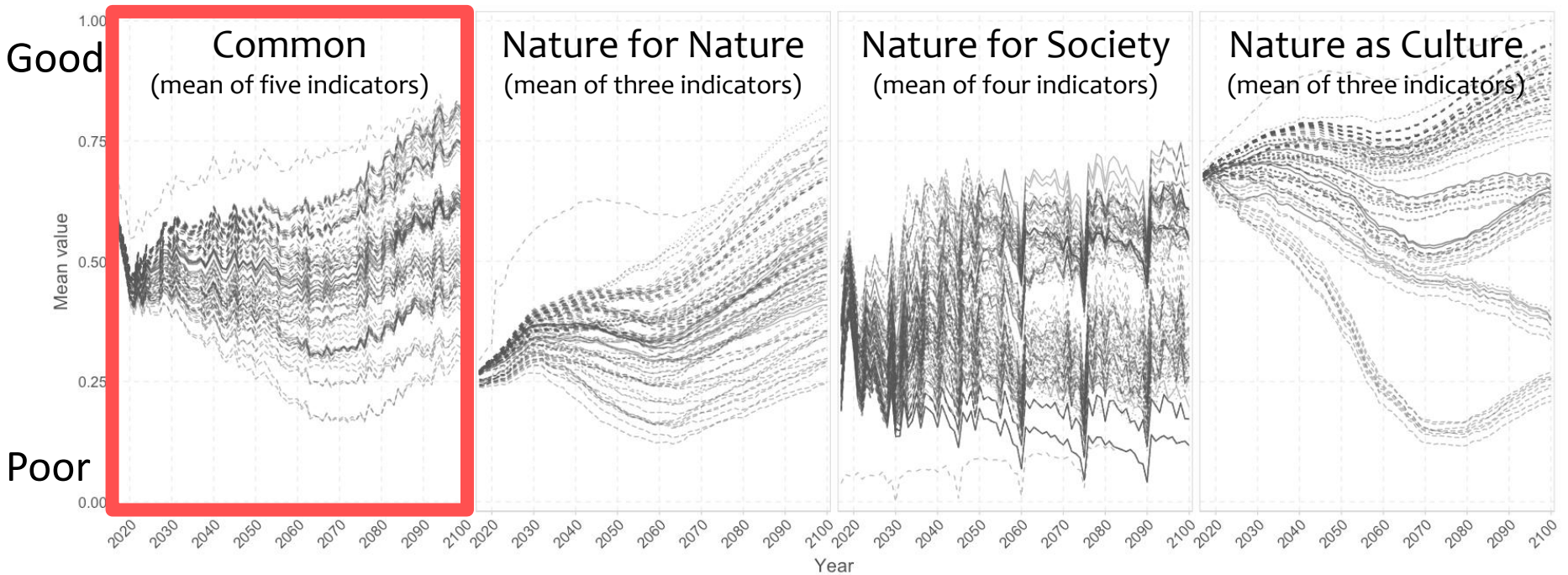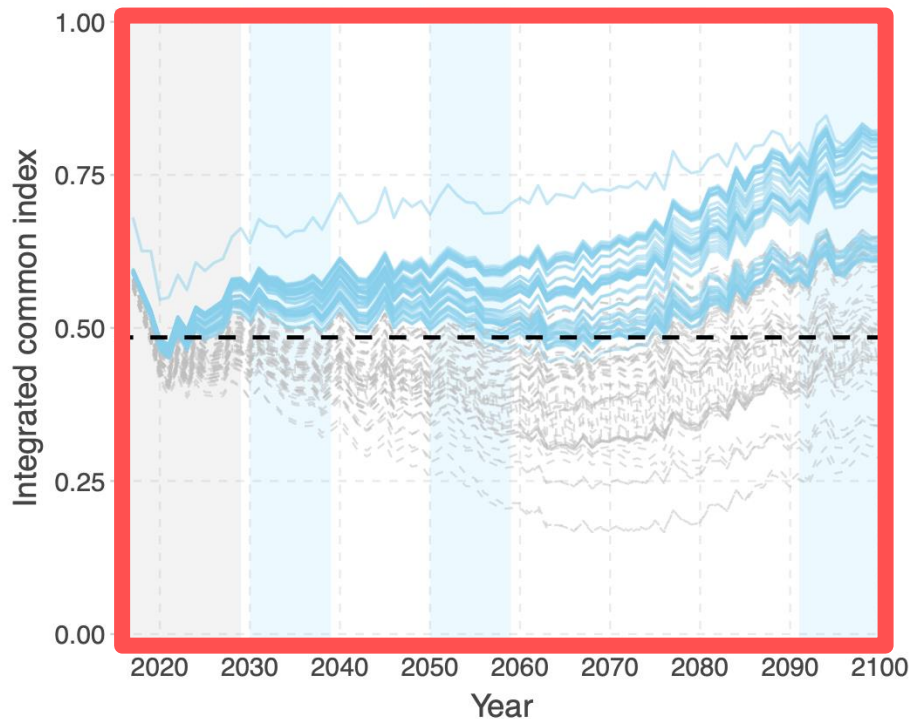## (110 cases x 4 categories x 85 years)

Fig. R1. Four integrated indicators by categories and time horizons for all 110 cases

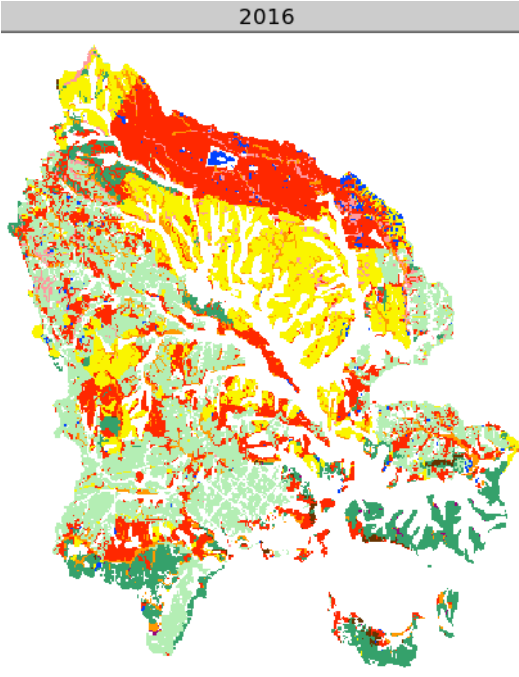# Result 2. Screening Nature Positives using a common indicator

Nature positives (N = 51)
== Mean value of 2030s and 2050s are equal to or greater than that of 2015-2029
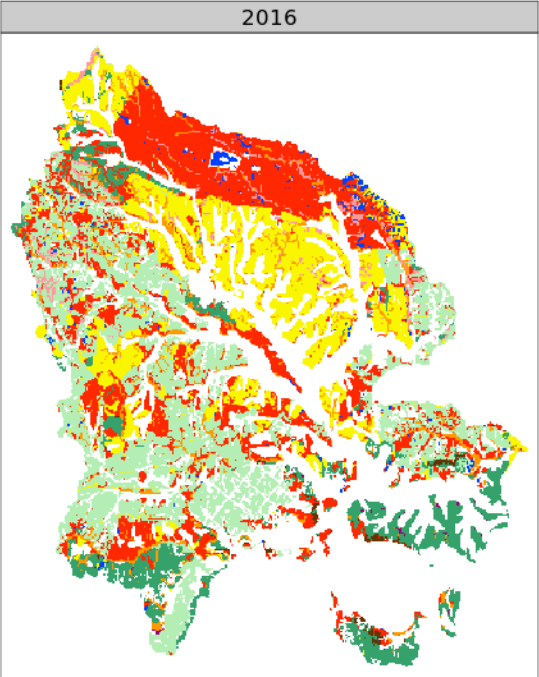
Mean value of 2015-2029

Figure 3. Time series of the integrated common indicator.

Result 3. LULC change for each scenario

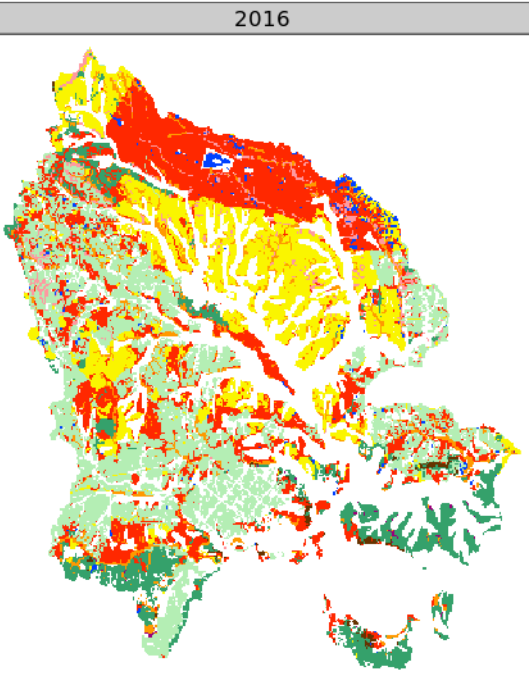**Nature for Nature**:
Restoring to a pristine natural environment

Nature for Society:
Maximizing provisioning service

Nature as Culture:
Maintain the landscape structure that supports the identities and livelihoods

Dominant Spp.
- Sakhalin Fir
- Japanese Larch
- Japanese White Birch
- Japanese Elm
- Japanese Alder
- Japanese Oak
- Manchurian Ash
- Pasture
- Dwarf bamboo
- Solar PV
- Wetland

Summary

- ☐ Four functions of IPBES

- ☐ IPBES conceptual framework

- ☐ Scenarios and models

- ☐ Nature Futures Framework to generate narratives/storylines, to simulate different futures by modeling, and to monitor indicators for global, national and local policy frameworks

- ☐ NFF case study in Japan

Appendix

Review

Are corporate biodiversity commitments consistent with delivering 'nature-positive' outcomes? A review of 'nature-positive' definitions, company progress and challenges

Sophus O.S.E. zu Ermgassen [a,b,*], Michael Howard [c], Leon Bennun [c,d], Prue F.E. Addison [b,e], Joseph W. Bull [a,b], Robin Loveridge [c], Edward Pollard [c], Malcolm Starkey [c]

[a] Durrell Institute of Conservation and Ecology, School of Anthropology and Conservation, University of Kent, UK
[b] Interdisciplinary Centre for Conservation Science, Department of Biology, University of Oxford, Oxford, UK
[c] The Biodiversity Consultancy, Cambridge, UK
[d] Conservation Science Group, Department of Zoology, University of Cambridge, Cambridge, UK
[e] Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust, Oxford, UK

https://doi.org/10.1016/j.jclepro.2022.134798

東京大学未来ビジョン研究センター
Institute for Future Initiatives
The University of Tokyo

IGES
Institute for Global
Environmental Strategies

zu Ermgassen et al. (2022)

31

Table 1. Review of the definitions or uses of 'nature-positive' adopted by key organisations attempting to operationalise the concept

Institution	Type of definition	Description of 'nature-positive'
Science-based targets network (SBTN)	Conceptual	Discusses the "elements of … nature-positivity": collective action to avoid and reduce pressures on nature and contribute towards nature regeneration, and judging success not only by the outcomes of the individual actor but also the wider ecosystem in which it is embedded (SBTN, 2021a)
UK Council for Sustainable Business	Conceptual	"A nature-positive approach puts nature and biodiversity gain at the heart of decision-making and design. It goes beyond reducing and mitigating negative impacts on nature as it is a proactive and restorative approach focused on conservation, regeneration, and growth." (CSB, 2022)
UNEP	Conceptual	"A Nature-positive Economy [is] an economy that is regenerative, collaborative and where growth is only valued where it contributes to social progress and environmental protection" (UNEP, 2021)
World Economic Forum	Conceptual	"A nature-positive built environment shares space with nature, putting whole ecosystems rather than humans alone at the centre of design" "Nature-positive extractive processes have the potential to minimize destructive land management practices and enhance conservation efforts to offset biodiversity impacts that cannot be either avoided or mitigated" "A nature-positive energy transition has the potential to further both global climate and nature goals" (WEF, 2020)
Global goal for nature	Target-based	"Zero Net Loss of Nature from 2020, Net Positive by 2030, and Full Recovery by 2050" (Locke et al., 2021)

zu Ermgassen et al. (2022)

Table 1. Review of the definitions or uses of 'nature-positive' adopted by key organisations attempting to operationalise the concept

Institution	Type of definition	Description of 'nature-positive'
IUCN	Target-based	"… an equitable, nature-positive and net zero world [would] ensure there is more nature globally in 2030 than there was in 2020, by halting and reversing the loss of nature to put nature on a path to recovery for the benefit of all people and the planet by 2030, as well as tackle climate change, achieve the Sustainable Development Goals, and enable people and communities to thrive in a healthy and stable future" (IUCN, 2020)
Natural England and UK Joint Nature Conservation Committee	Target-based	"Becoming Nature-positive means reversing the current declines in biodiversity, so that species and ecosystems begin to recover" (JNCC, 2021)
Nature-positive Universities network	Target-based	"Nature-positive means restoring species and ecosystems that have been harmed by the impacts of a university and its activities and enhancing the university's positive impacts on nature" (Nature-positive Universities Network, 2022)
Taskforce for Nature-related Financial Disclosures	Target-based	"A high-level goal and concept describing a future state of nature (e.g. biodiversity, ecosystem services and natural capital) which is greater than the current state" (TNFD, 2022a)
Business for Nature	Process-based	Does not define nature-positive, but outlines how to achieve nature-positive outcomes via a process of "assess, commit, act, advocate" (Business For Nature, 2021)
World Business Council for Sustainable Development	Process-based	Does not define nature-positive, but outlines how to achieve nature-positive outcomes via the procedural building blocks of "assess and prioritise, commit, measure and value, act, transform, disclose and report" (WBCSD, 2021b)

zu Ermgassen et al. (2022)

追加

Institution	Type of definition	Description of 'nature-positive'
The Nature Positive Initiative (NPI)	Target-based	"Nature Positive is a global societal goal defined as 'Halt and Reverse Nature Loss by 2030 on a 2020 baseline, and achieve full recovery by 2050'." (NPI) "measurable net-positive biodiversity outcomes through the improvement in the abundance, diversity, integrity and resilience of species, ecosystems and natural processes. The Nature Positive goal is designed to drive society to deliver a measurable absolute improvement in the state of nature against a defined baseline, which will in turn improve nature's ability to contribute to human wellbeing" (NPI)

https://www.naturepositive.org/
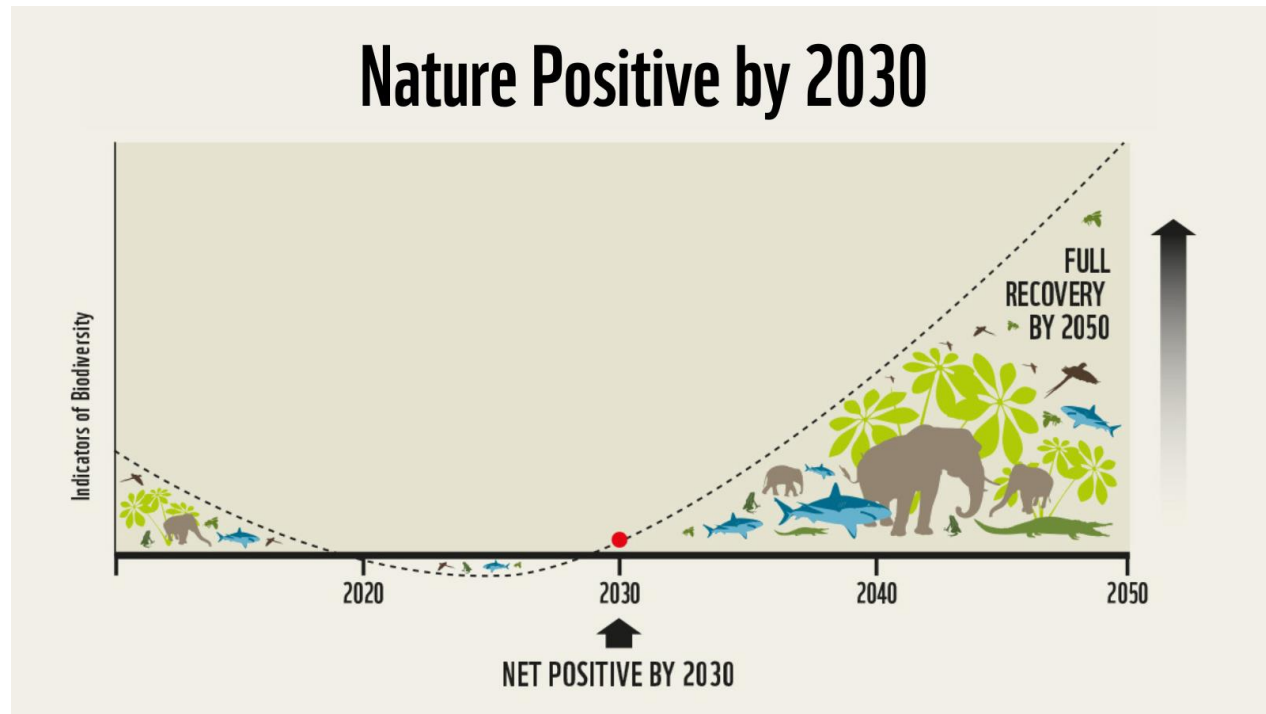
S-21でのNature Positiveの定義に向けて
（阪大・田中・芳賀・松井,未発表）

Positive of nature

State goals for restoring ecosystem

Positive by nature

Nature-based solution

Positive to nature

Nature positive economy

IGES
Institute for Global
Environmental Strategies

東京大学未来ビジョン研究センター
Institute for Future Initiatives
The University of Tokyo

Definitions of Nature Positive: of / by / to （阪大・田中・芳賀・松井,未発表）

Institution	Positive of Nature	Positive by Nature	Positive to Nature	Type of definition	Description of 'nature-positive'
Science-based targets network (SBTN)	1		1	Conceptual	Discusses the "elements of … nature-positivity": collective action to avoid and reduce pressures on nature and contribute towards nature regeneration, and judging success not only by the outcomes of the individual actor but also the wider ecosystem in which it is embedded (SBTN, 2021a)
UK Council for Sustainable Business	1		1	Conceptual	"A nature-positive approach puts nature and biodiversity gain at the heart of decision-making and design. It goes beyond reducing and mitigating negative impacts on nature as it is a proactive and restorative approach focused on conservation, regeneration, and growth." (CSB, 2022)
UNEP		1		Conceptual	"A Nature-positive Economy [is] an economy that is regenerative, collaborative and where growth is only valued where it contributes to social progress and environmental protection" (UNEP, 2021)
World Economic Forum	1			Conceptual	"A nature-positive built environment shares space with nature, putting whole ecosystems rather than humans alone at the centre of design"
			1		"Nature-positive extractive processes have the potential to minimize destructive land management practices and enhance conservation efforts to offset biodiversity impacts that cannot be either avoided or mitigated"
	1	1			"A nature-positive energy transition has the potential to further both global climate and nature goals" (WEF, 2020)
Global goal for nature	1			Target-based	"Zero Net Loss of Nature from 2020, Net Positive by 2030, and Full Recovery by 2050" (Locke et al., 2021)
IUCN	1	1		Target-based	"… an equitable, nature-positive and net zero world [would] ensure there is more nature globally in 2030 than there was in 2020, by halting and reversing the loss of nature to put nature on a path to recovery for the benefit of all people and the planet by 2030, as well as tackle climate change, achieve the Sustainable Development Goals, and enable people and communities to thrive in a healthy and stable future" (IUCN, 2020)
Natural England and UK Joint Nature Conservation Committee	1			Target-based	"Becoming Nature-positive means reversing the current declines in biodiversity, so that species and ecosystems begin to recover" (JNCC, 2021)
Nature-positive Universities network	1		1	Target-based	"Nature-positive means restoring species and ecosystems that have been harmed by the impacts of a university and its activities and enhancing the university's positive impacts on nature" (Nature-positive Universities Network, 2022)
Taskforce for Nature-related Financial Disclosures	1	1		Target-based	"A high-level goal and concept describing a future state of nature (e.g. biodiversity, ecosystem services and natural capital) which is greater than the current state" (TNFD, 2022a)
Business for Nature			1	Process-based	Does not define nature-positive, but outlines how to achieve nature-positive outcomes via a process of "assess, commit, act, advocate" (Business For Nature, 2021)
World Business Council for Sustainable Development			1	Process-based	Does not define nature-positive, but outlines how to achieve nature-positive outcomes via the procedural building blocks of "assess and prioritise, commit, measure and value, act, transform, disclose and report" (WBCSD, 2021b)

zu Ermgassen et al. (2022)

IGES Institute for Global Environmental Strategies

東京大学未来ビジョン研究センター Institute for Future Initiatives The University of Tokyo