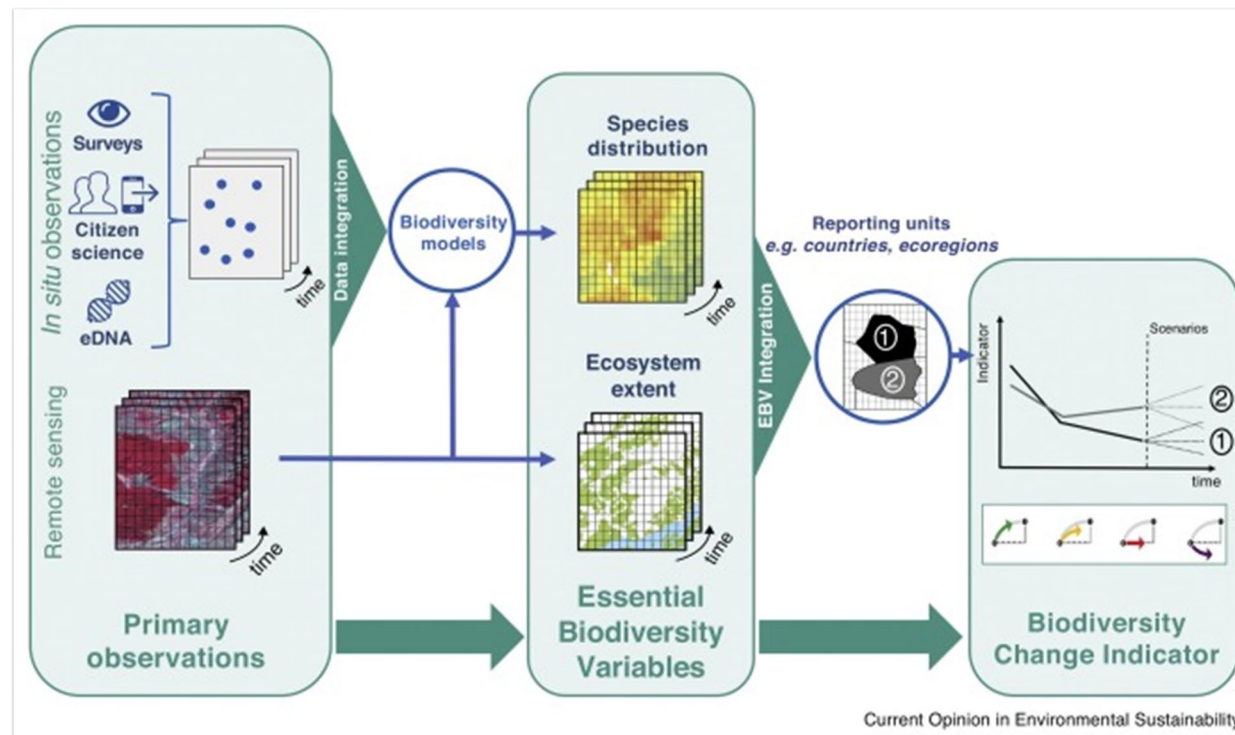


From data to EBVs: Preliminary assessment of data gaps and mismatches of EBVs from Asia-Pacific perspectives

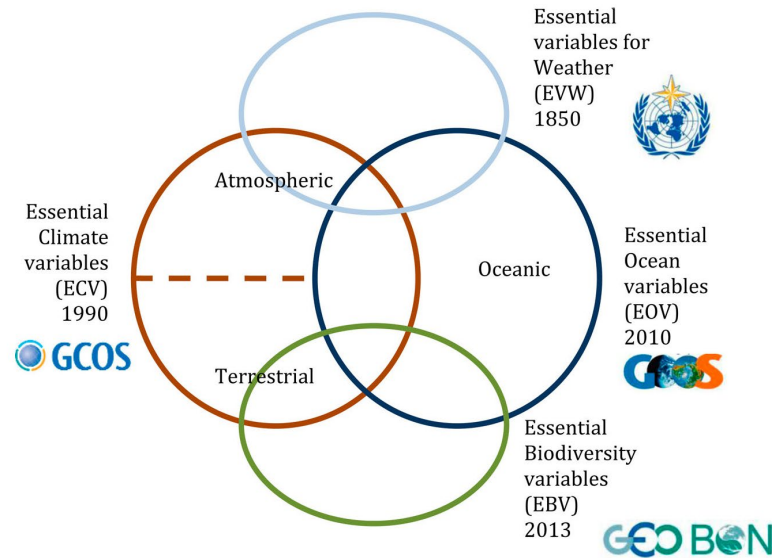
-From Terrestrial observation perspectives



KM-GBF
Goals and
targets

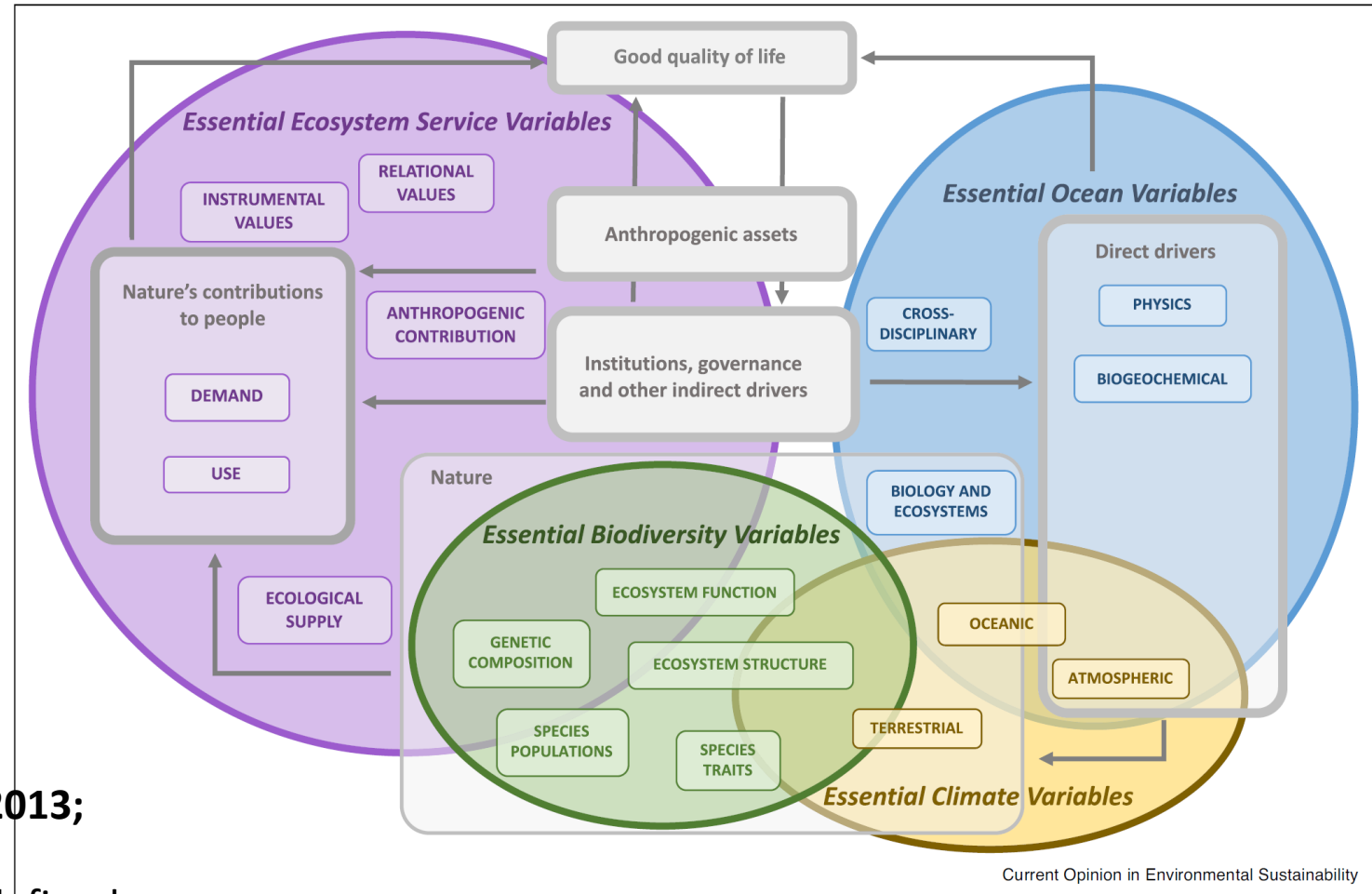
Yayoi Takeuchi (National Institute for Environmental Studies)

Essential Biodiversity Variables




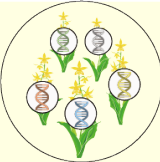




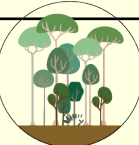

Masō et al. 2020

- Essential Climate Variables
- **Essential Ocean Variables** (IOC, 2011)
- **Essential Biodiversity Variables** (Pereira et al. 2013; Navarro et al. 2017)
- **Essential Ecosystem Service Variables** (EESVs): defined as a type of EBV to support the monitoring of ecosystem services (Balvanera et al. 2022).



Balvanera et al. 2022

6 EBV classes and 21 EBV attributes

Approach	EBV Class	EBV Attributes
Species (Species-focused EBVs) 	Genetic Composition 	Genetic diversity Genetic differentiation Effective population size Inbreeding
	Species Populations 	Species distributions Species abundances
	Species Traits 	Morphology Physiology Phenology Movement Reproduction
Ecosystem (Ecosystem-focused EBVs) 	Community Composition 	Community abundance Taxonomic/phylogenetic diversity Trait diversity Interaction diversity
	Ecosystem Structure 	Live cover fraction Ecosystem distribution Ecosystem vertical profile
	Ecosystem Function 	Primary productivity Ecosystem phenology Ecosystem disturbances

Fernández et al 2020
https://doi.org/10.1007/978-3-030-33157-3_18

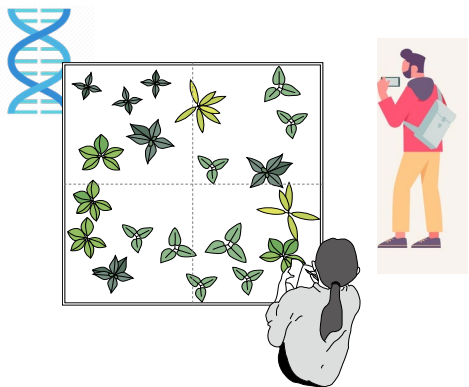
Primary data, EBVs, Indicators

Frequently Asked Question:
What is the difference between
EBVs and Indicators?

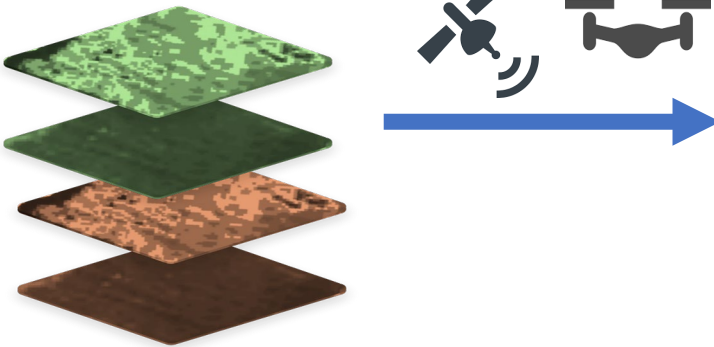
Primary data

Observation data

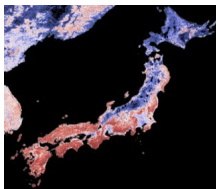
DNA, field survey
Citizen science



Remote sensing data



Modeling



EBVs

Integrated scientific
information on biodiversity

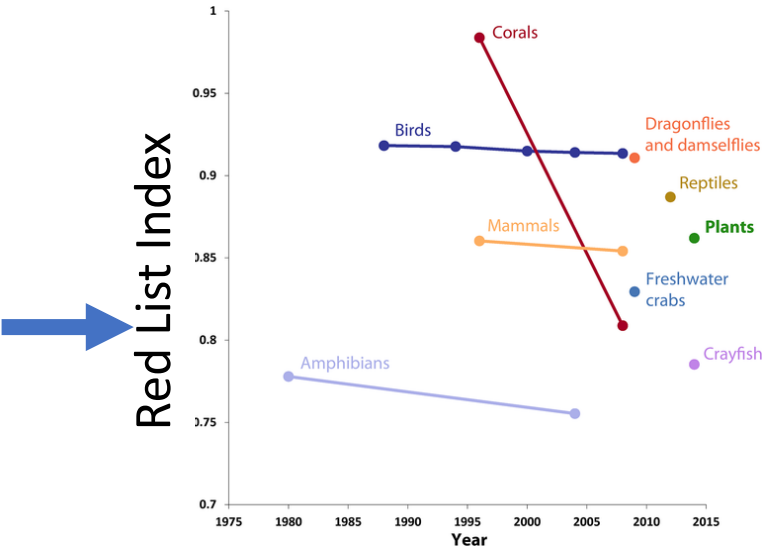
Primary data is integrated data for
each attribute

Approach	EBV Class	EBV Attributes
Species (Species-focused EBVs)	Genetic Composition	Genetic diversity
		Genetic differentiation
		Effective population size
		Inbreeding
	Species Populations	Species distributions
		Species abundances
Ecosystem (Ecosystem-focused EBVs)	Species Traits	Morphology
		Physiology
		Phenology
		Movement
	Community Composition	Reproduction
		Community abundance
		Taxonomic/phylogenetic diversity
	Ecosystem Structure	Trait diversity
		Interaction diversity
	Ecosystem Function	Live cover fraction
		Ecosystem distribution
		Ecosystem vertical profile
		Primary productivity
		Ecosystem phenology
		Ecosystem disturbances

Indicators

Knowledge for understanding
the progress towards targets or
goals

Biodiversity Change



Brummitt et al (2015)

D4.1. List and specifications of EBVs and EESVs for a European wide biodiversity observation network

31/07/2022

Lead beneficiary: Martin-Luther-Universitat Halle-Wittenberg (MLU)

EBV list for EUROPA BON: Identify a set of EBVs that can be feasibly included in the co-design process of biodiversity monitoring.

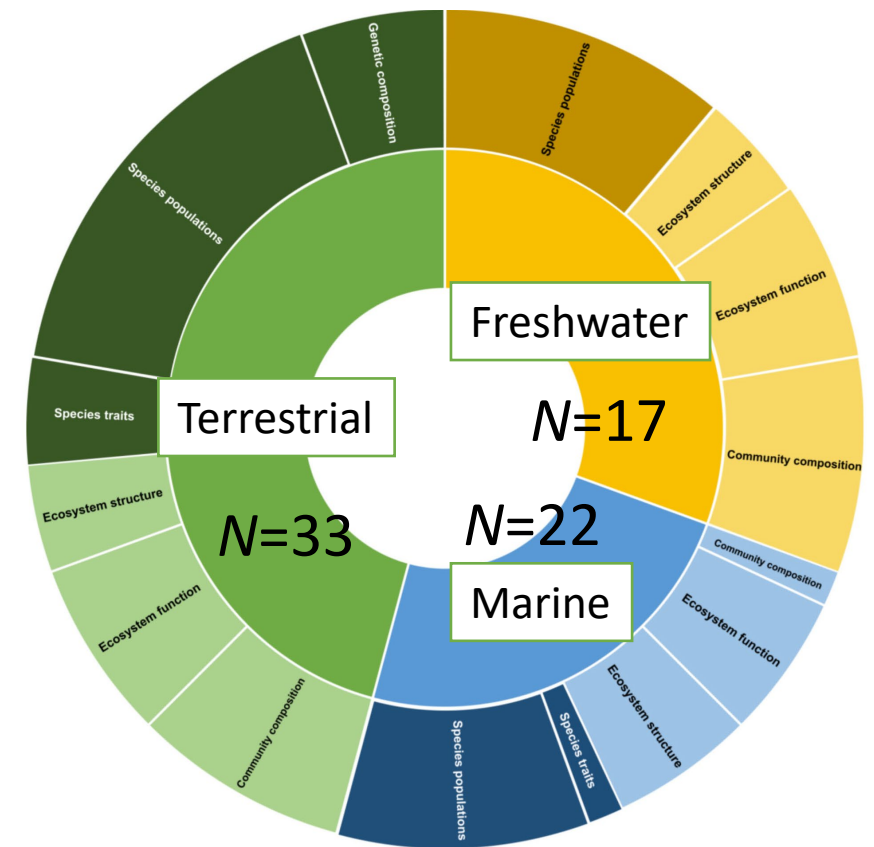


Figure 3: List of species- (lighter colours) and ecosystem-focused (darker colours) EBV classes and their realms.

N=35

Approach	EBV Class
Species (Species-focused EBVs)	Genetic Composition
	Species Populations
	Species Traits

N=37

Ecosystem (Ecosystem-focused EBVs)	Community Composition
	Ecosystem Structure
	Ecosystem Function

EBVs for AP-region: Issues

- **Challenges in Converting Primary Data to EBVs:** Data availability, accessibility, quality, standardization, and technical limitations.
- **Criteria for Prioritizing EBVs:** What criteria can be used to prioritize EBVs? Consider spatial and temporal resolutions, taxonomic scopes, and ecosystem types.
- **Improving Biodiversity Monitoring Efforts:** How can these EBVs enhance current biodiversity monitoring efforts?
- **Collaboration and Data Sharing Opportunities:** Explore opportunities for collaboration and data sharing with other TGs of AOGEO and how such collaboration can enhance biodiversity monitoring.

