

Assessing Risks to Biodiversity from Exposure to Chemicals: Findings of an ECETOC Task Force on the Regulatory Context

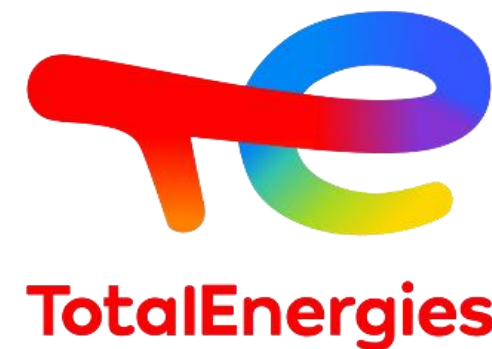
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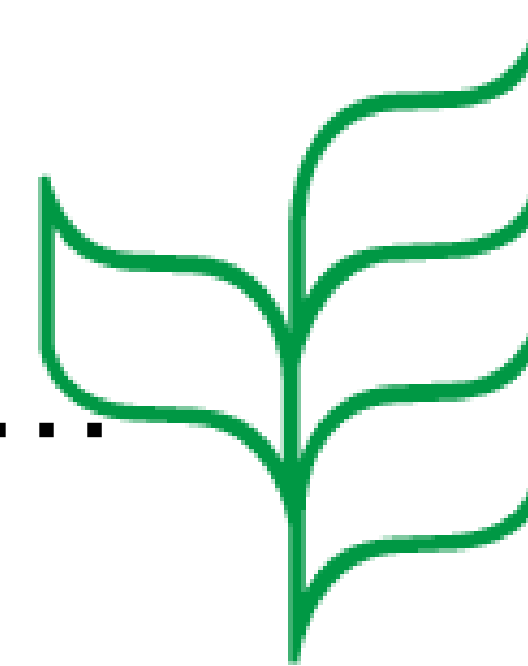


ECETOC Biodiversity Committee

*Assessing risks to
biodiversity from
exposure to
chemicals: where
are we and where
should we be
going?*



Global Biodiversity Protection – A brief history...



Convention on
Biological Diversity

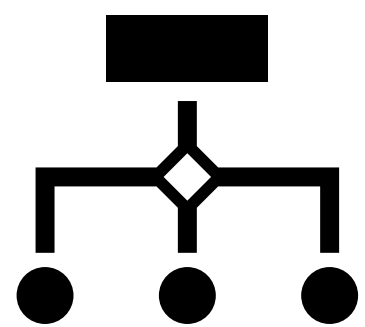
- The UN – Convention on Biological Diversity (CBD) – a key instrument for sustainable development signed in 1992.
- There have been 15 “Convening of Parties” (COP) related to biodiversity protection
- At COP15 December 2022 in Montreal the Kunming-Montreal Global Biodiversity Framework was adopted - an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. Among the Framework’s key elements are 4 goals for 2050 and 23 targets for 2030.
- At COP 16 governments will be tasked with reviewing the state of implementation of the Kunming-Montreal Global Biodiversity Framework and show the alignment of their National Biodiversity Strategies and Action Plans (NBSAPs).



How does Kunming-Montreal Global Biodiversity Framework link into Assessing Chemicals?



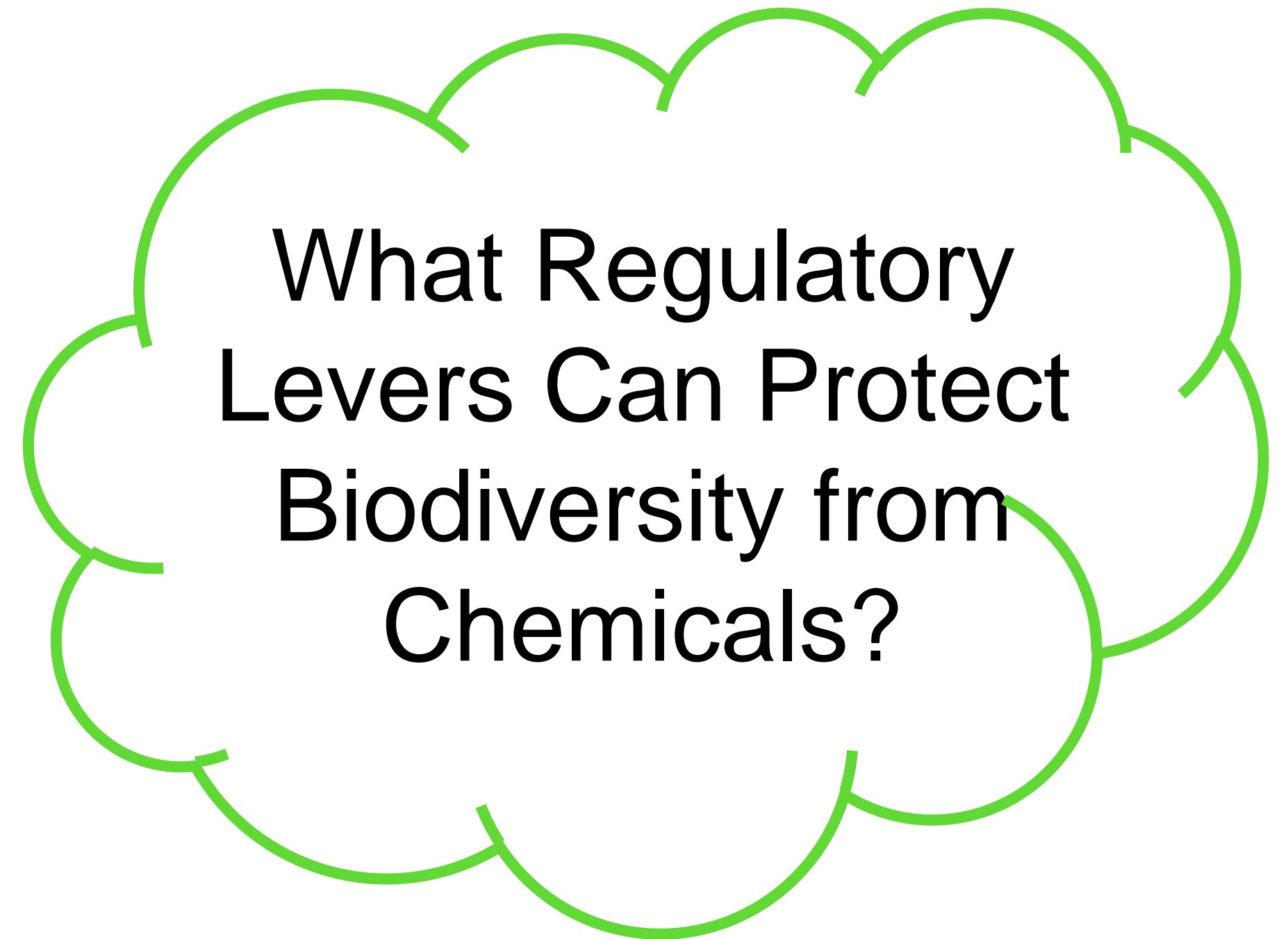
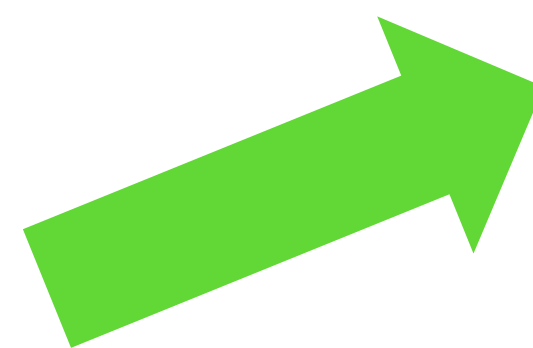
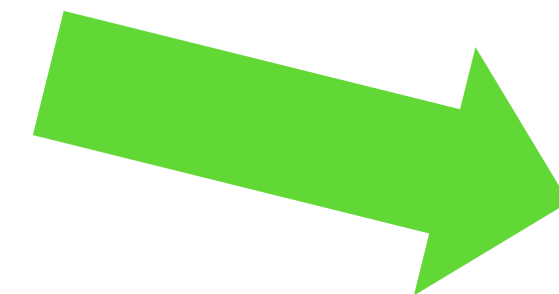
TARGET 7: Reduce Pollution to Levels That Are Not Harmful to Biodiversity



TARGET 14: Integrate Biodiversity in Decision-Making at Every Level



TARGET 15: Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts



What Regulatory Levers Can Protect Biodiversity from Chemicals?

EU Regulatory Programs attempting to Protecting Biodiversity?

Green Deal initiatives identify chemical inputs as a main driver of biodiversity decline

Chemical manufacturers and applicators are facing increasing regulatory demands to mediate and mitigate this decline

Regulators and researchers are calling for more holistic assessment of how biodiversity is affected by chemical exposure



EU focus on Biodiversity

The EU Commission has set goals for managing chemicals as one of the presumed influencing factors and aims to mitigate the entry and effects of chemicals in the environment.

Challenge:

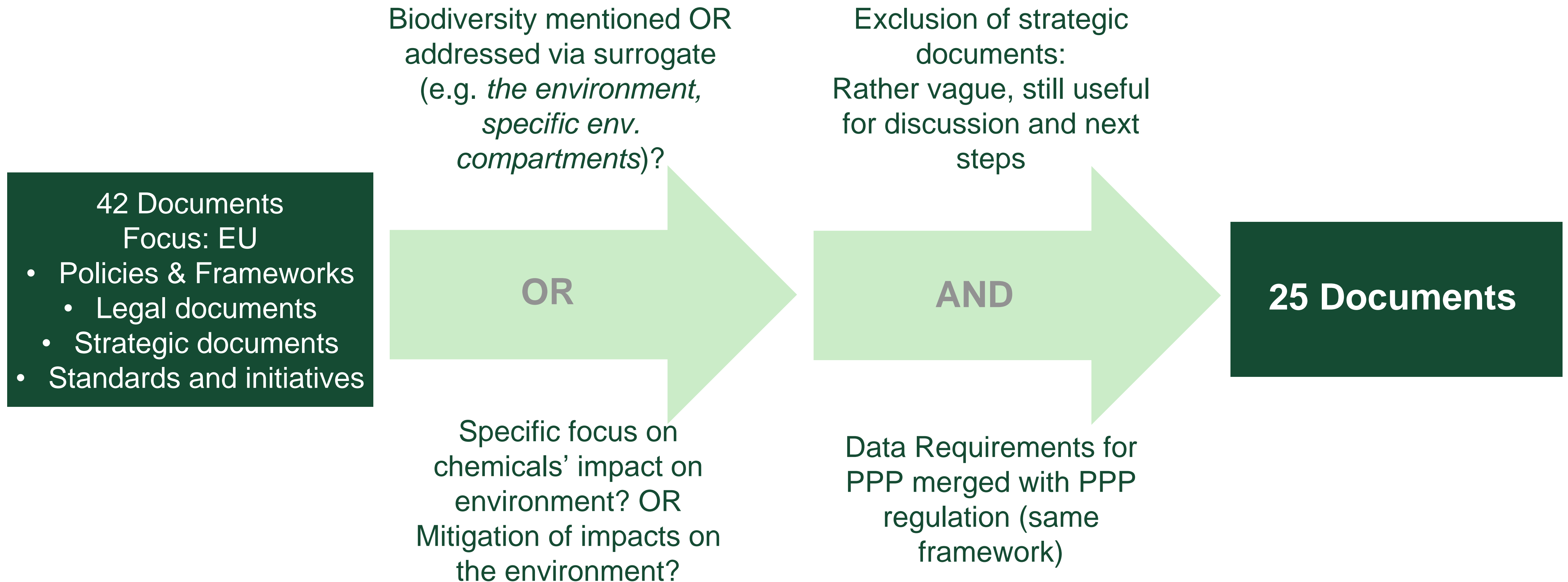
Unclear definitions and metrics for biodiversity and how to efficiently link them to chemical regulation.

Links between biodiversity loss and chemical exposure for different taxa and systems are not fully established,

Unclear the relative contribution of chemicals compared to other pressures on biodiversity like habitat loss from land-use change

Task Force subgroup 1 focussing on EU chemical regulation and strategic documents, that looked into *regulatory context for considering biodiversity in chemical risk regulation.*

Methods: Filtering process of documents for further evaluation

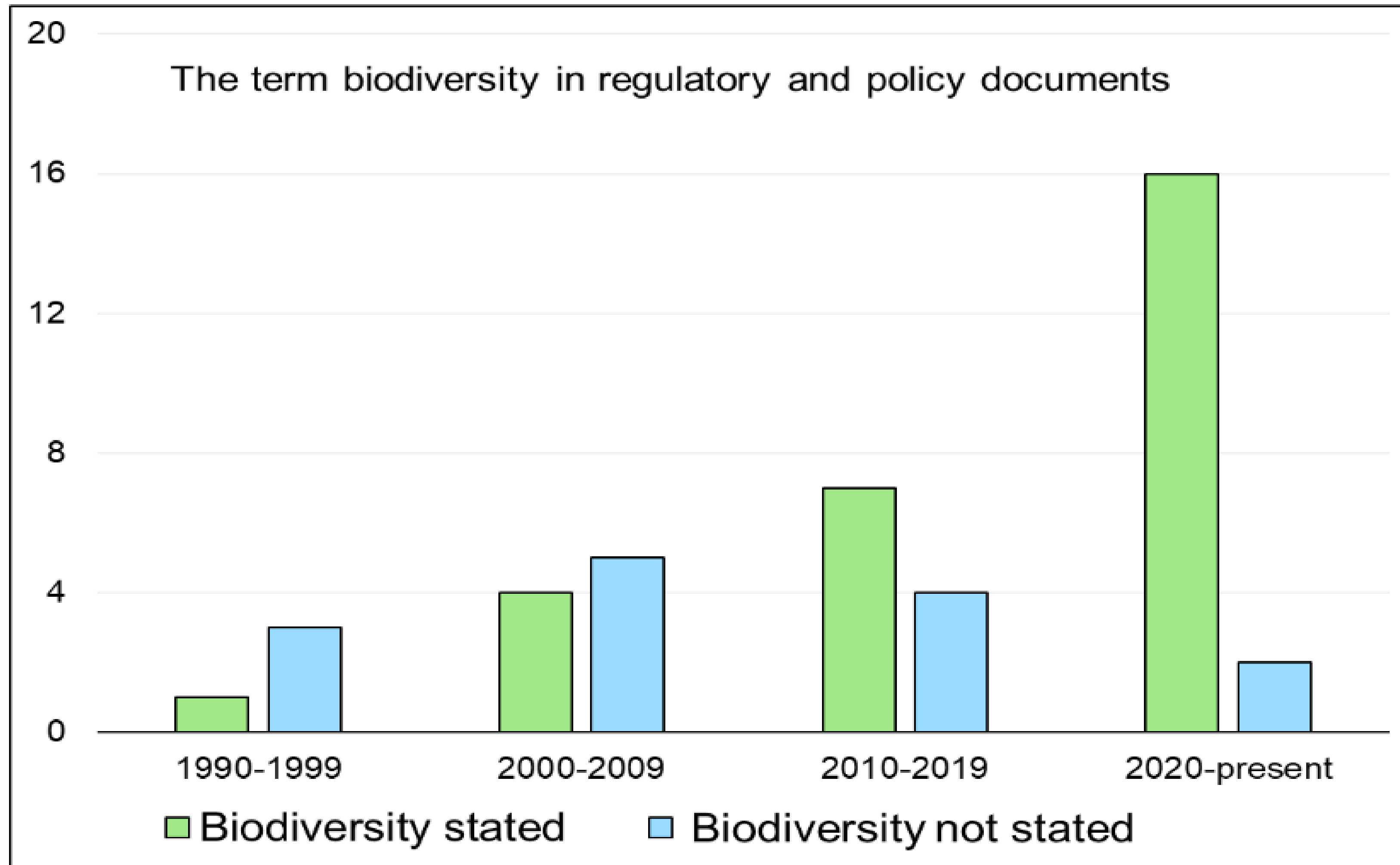


Findings on Biodiversity in Regulations

The main findings can be summarized as follows:

- The term biodiversity is gaining prominence, but it is still stated in only half of the documents (13)
- Definitions for biodiversity are rarely provided (5)
- Metrics for biodiversity or environmental assessment are provided in 6 and 3 documents, respectively.
- Metrics are often vague (habitat conditions, political indices, „good conditions“) but become more precise (e.g., populations of surrogate species) when the chemicals are intended for use in the environment, or their release is anticipated. (e.g plant protection products and biocides).
- Technical Guidance Documents to the legal documents were not evaluated, however, some of these documents are likely to provide more precise metrics than the main legal text of regulations and directives.

Findings of subgroup #1: Lack of definition is reflected in EU regulation



Lack of definition is reflected in EU regulation

Scope of subgroup:

- Identify coverage, definitions, and metrics of biodiversity in EU-relevant legal documents
- Screened 42 documents → reduced to 25 in “deep dive” (excluded strategy documents)

11		7		0		5		1		1	
PPP's											
283/2013											
284/2013											
CLP REG											
REACH		<i>Soil DIR</i>									
POP REG		UWWT DIR									
VetMed Products		CSRD									
Med Products REG		Industrial Emission DIR									
Fertilizer Products		SUD									
Biocide Regulation		Birds DIR		Green Deal		CAP					
Batterie,Waste B REG		Habitats DIR		Biodiversity		EU Taxonomy					
EUDR		Marine Strategy DIR		F2F		WFD					
Cosmetic Products		CS3D		Chemicals		SSbD				Circular Economy	
Nature Restoration		WEEE DIR		EU Zero Poll Action Plan		GBF				AMR Emission Standard	
SUR		Biocidal Products Dir		ECHA Key Reg Challenges		OSPARCOM		Supply Chain Act (D)		EU Pollinators Init	
Regulations		Directives		Strategies		Frameworks		national laws		other	

Lack of definition is reflected in EU regulation

- Biodiversity is defined in only 5 documents, largely following CBD 1992
- Of papers that discussed biodiversity or “the environment,” only 9 documents provide metrics
- Metrics vary in specificity (e.g., populations of surrogate species, habitat conditions, political indices, or just “good conditions)

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EUDR	Marine Strategy DIR	F2F	WFD		
Cosmetic Products	CS3D	Chemicals	SShD		
Nature Restoration	WEEE DIR	EU Zero Poll Action Plan	GBE		
SUR	Biocidal Products Dir	ECHA Key Reg Challenges	OSPARCOM	Supply Chain Act (D)	Circular Economy
Regulations	Directives	Strategies	Frameworks	national laws	other
					AMR Emission Standard
					EU Pollinators Init

Deep Dive

Biodiversity	5	5	3	0	0
definition	2	0	3	0	0
Metrics (BD&Env)	3	2	2	1	0

25 Documents

Regulatory definition of biodiversity and clear metrics?

13 state Biodiversity explicitly

5 provide Definition for Biodiversity

6 provide (some kind of) Metrics for Biodiversity

3 provide metrics for environment

➤ The definitions mainly follow CBD 1992 (Rio)

➤ Few distinct metrics, most just vaguely defined,

- Populations of surrogate species
- Habitat conditions
- (political) Indices
- „good condition“

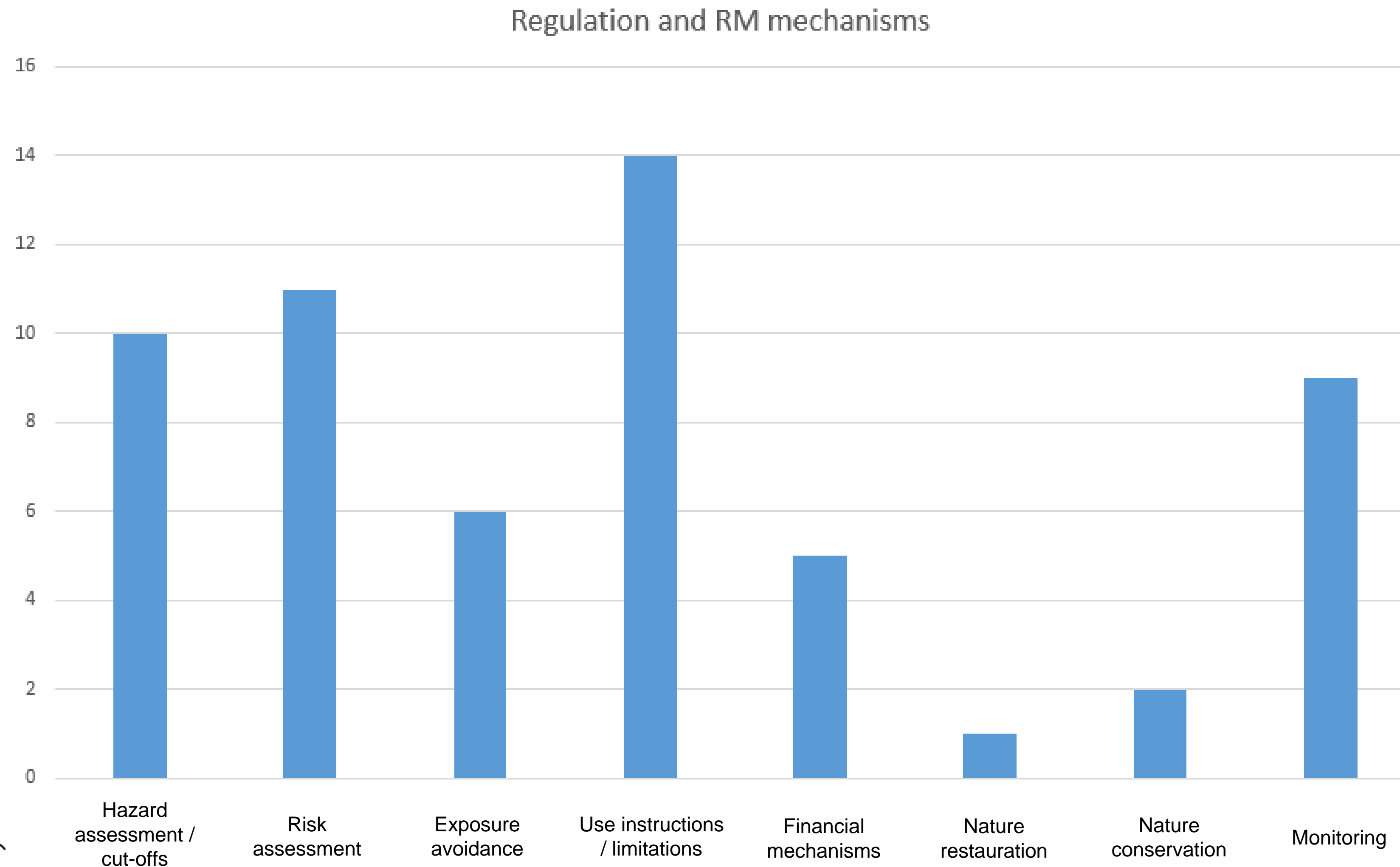
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			CAP		
			EU Taxonomy		
			WFD		
			GBF		
			OSPARCOM	Supply Chain Act (D)	AMR Emission Standard
Regulations	Directives	Strategies	Frameworks	national laws	other

italics: not yet in force

bold: Def. BD included

Mechanisms for impact regulation of chemicals

→ The purpose and scope of a regulation / policy strongly influences the mechanisms



EU focus on biodiversity

- Looking at mechanisms applied for regulation and risk management of chemicals it can be summarized that each document generally states several of these mechanisms.
- The choice and combination of the mechanism is linked to the purpose and scope of the document. For most chemicals a release in the environment is not intended, therefore the focus is on mechanisms safeguarding no release, e.g. exposure avoidance and use instructions / use limitations.
- Where potential pollutants are concerned, hazard and eventually risk assessment gain more focus. This focus becomes stronger where the release is intended or unavoidable.
- In recent times, monitoring and financial mechanisms are increasingly stated. The latter include payments, reporting obligations and due diligence.

Take-home Messages

- Biodiversity and associated metrics remain poorly defined in chemical regulation legislation
- EU-sponsored research on effects of chemicals on biodiversity is growing but lacks transferable knowledge to legislative action
- Biodiversity metrics and methods vary according to ecosystem
- Trait diversity and ecosystem function – not taxonomic diversity – are the most widely applied definitions in the literature
- Next-generation methods including remote sensing and eDNA are among the most prevalent in academic literature

Recommendations / Next Steps / Future Research

- Definitions of biodiversity need to be specified for the purpose of different regulations to define operational protection goals and biodiversity metrics for risk assessments. The ecosystem service concept can provide a basis for this.
- Synthesize the outcomes of the three TF working groups to provide recommendations about how existing and developing biodiversity definitions and methodologies can be translated and adopted into the regulatory context, incl. considerations on spatial and temporal scales – to be further discussed in the TF workshop planned for 2025
- There needs to be a way to facilitate greater adoption of new research and developments relevant for policy and regulation related to biodiversity.
- Drive research by identifying needs and gaps in regulation more clearly.
- Go global: move away from habitat-specific studies and focus on large-scale, global datasets that can be interpreted through machine learning algorithms
- Formulate definitions of biodiversity that are operational within specific chemical regulatory contexts and that are consistent with broadly agreed definitions and which are used in academic fields
- Provide recommendations on methodologies for chemical risk assessments for biodiversity
- Make better connections between regulatory and academic research on data sharing.

Thank you.