Expert Input to the Post-2020 Global Biodiversity Framework

Transformative actions on all drivers of biodiversity loss are urgently required to achieve the global goals by 2050

25 January 2022

Organising committee

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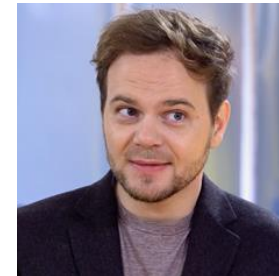bioDISCOVERY
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Genesis of the report

- May-June 2021: During SBSTTA-24, the need for additional scientific advice on several aspects of the post-2020 global biodiversity framework (GBF) was noted (for example, linkages between 2030 Action Targets and 2050 Goals).

- Because of the pandemic, nearly three years have passed since the release of the IPBES Global Assessment, and it was also important to provide a synthesis of latest scientific publications to the post-2020 process.

- Problem: given procedural constraints to produce an IPBES assessment, it was impractical to organise a rapid assessment process to fill this gap.

- September-December 2021: The scientific community proactively organised (through secretariats of bioDISCOVERY/Future Earth and GEO BON) a collective effort to synthesise the latest available scientific knowledge on the level and type of ambition that is necessary to achieve global biodiversity goals in 2050.

Process of the report

- Organising committee invited scientific experts working on various realms (e.g., freshwater, marine, terrestrial) and dimensions of biodiversity (e.g., genetic, species abundances, communities, ecosystems) and from diverse geographical backgrounds. In total, 52 contributors from 23 countries. Selection focused on experts who are involved in GEO BON, bioDISCOVERY or IPBES.

- Collective work was iterative: initial themes proposed by organising committee were discussed during online workshops (early Nov 2021) and then refined, sub-groups of authors worked on synthesising different aspects of the scientific literature published since 2019.

- Four external experts were invited to review the document.
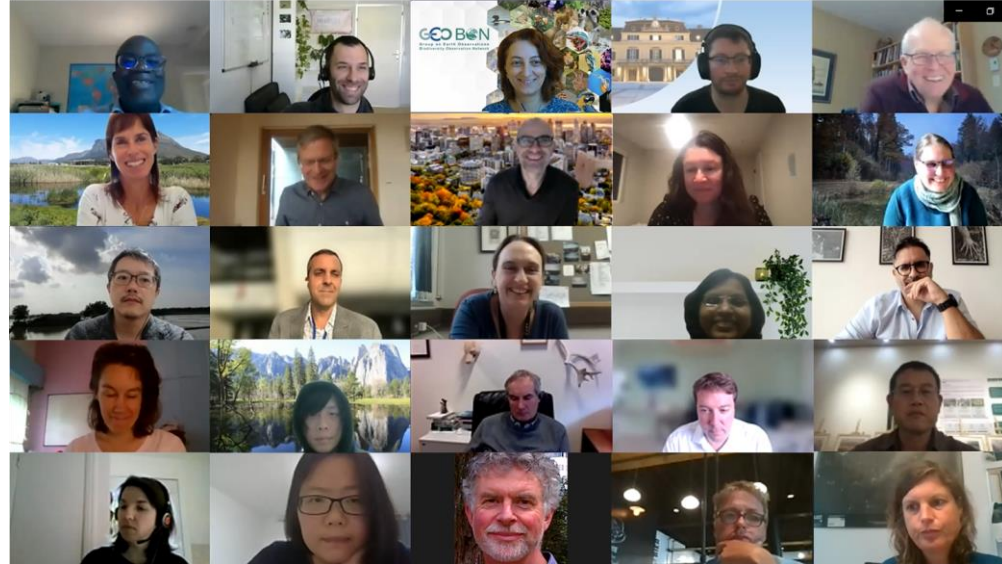
See page 7-8 for the full list of contributors

Process of the report

- The Secretariat of the CBD was informed of this collective work and accepted to publish it as an INF document:

   CBD/WG2020/3/INF/11; CBD/SBSTTA/24/INF/31.

- SCBD and post-2020 co-chairs provided feedback on clarity and consistency of the text.

Objectives of the report

- Show how the 21 Action Targets are related to the outcomes for biodiversity set out in the Goals and Milestones of the GBF. Main focus on Goal A and its Milestones. Other Goals and aspects very important as well, but focus was necessary because of time constraint.

- Synthesize the evidence base for setting the ambition needed to address the drivers of biodiversity loss in order to meet the 2030 milestones and 2050 goals;

- Show the importance of using indicators that track progress towards goals and targets, that enable attribution of biodiversity change to drivers, and that inform strategic planning of actions needed to achieve the GBF outcomes.

Framework of the report

Focus on direct and indirect drivers, their impacts on biodiversity and ecosystems (Goal A), and actions that reduce the negative impact of these drivers
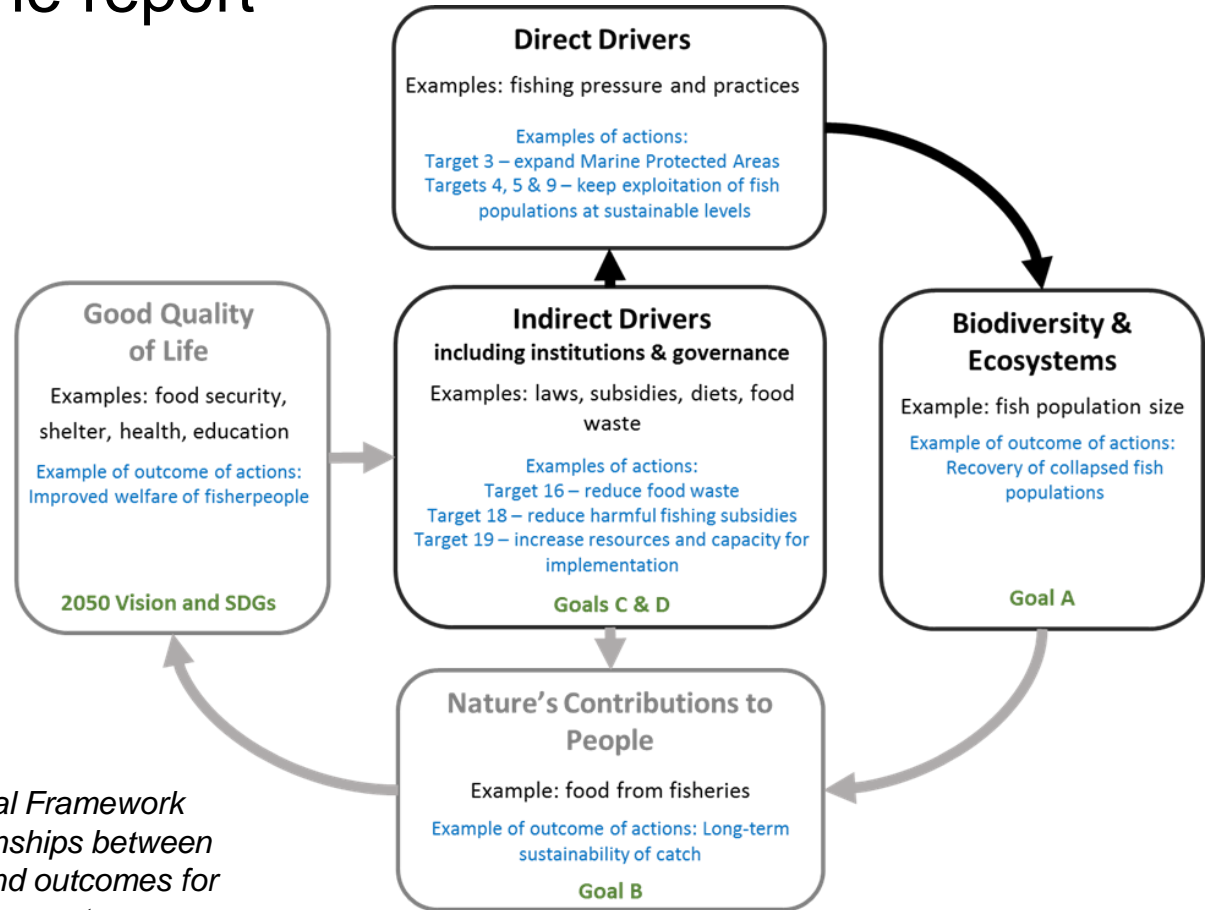
IPBES Conceptual Framework illustrating relationships between drivers, targets and outcomes for biodiversity and ecosystems
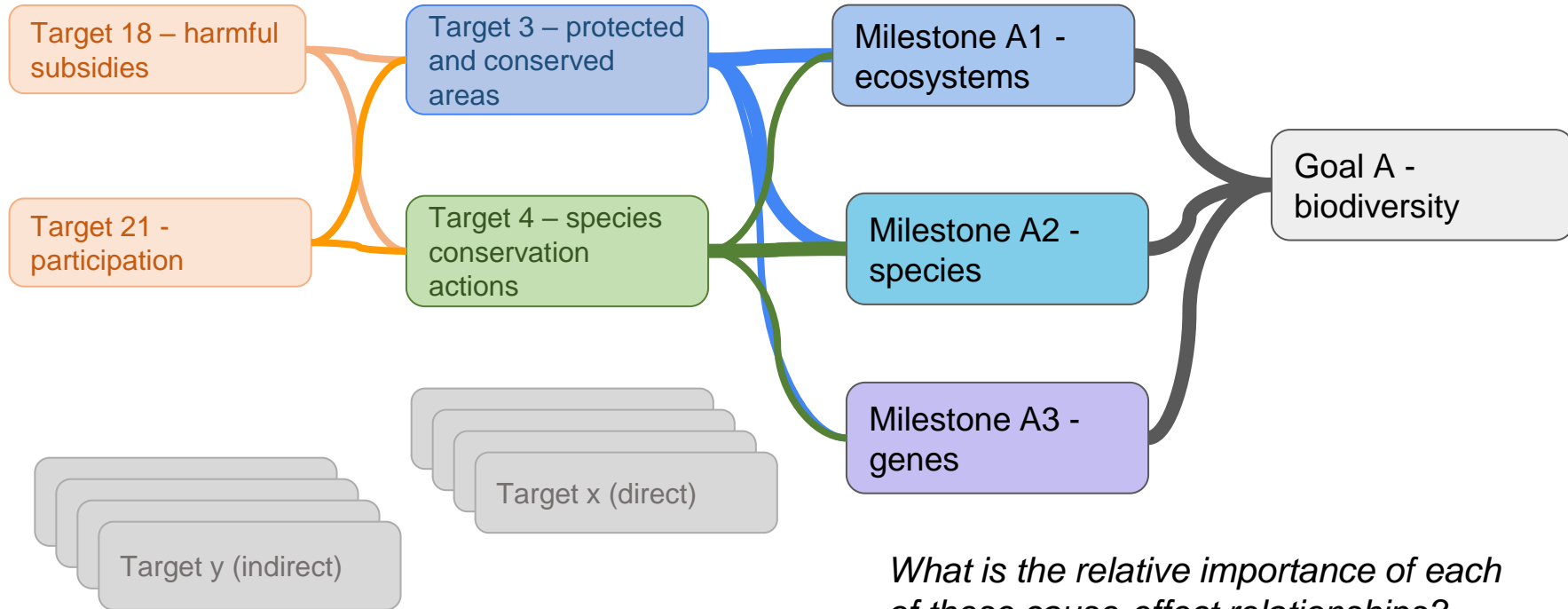
Finding 1 - *Action targets are linked to multiple milestones and goals*
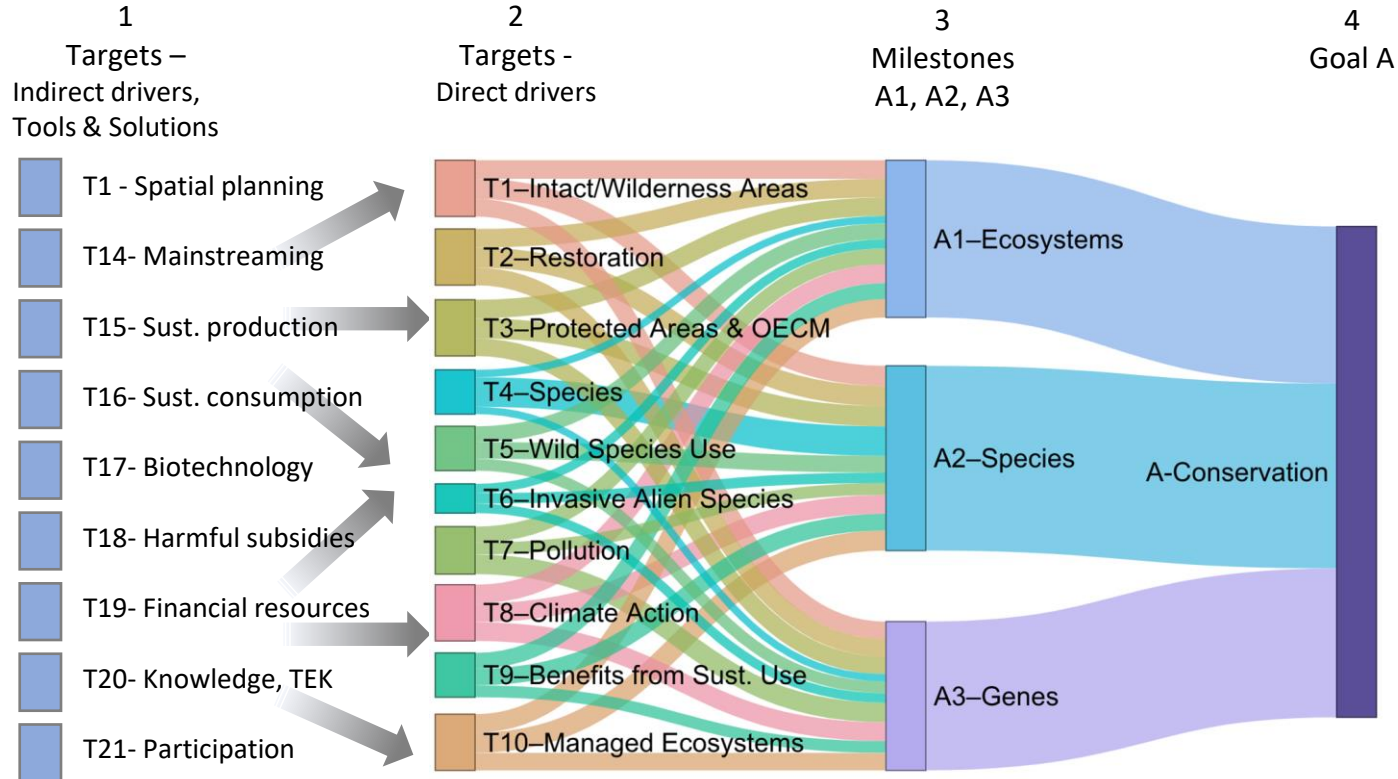
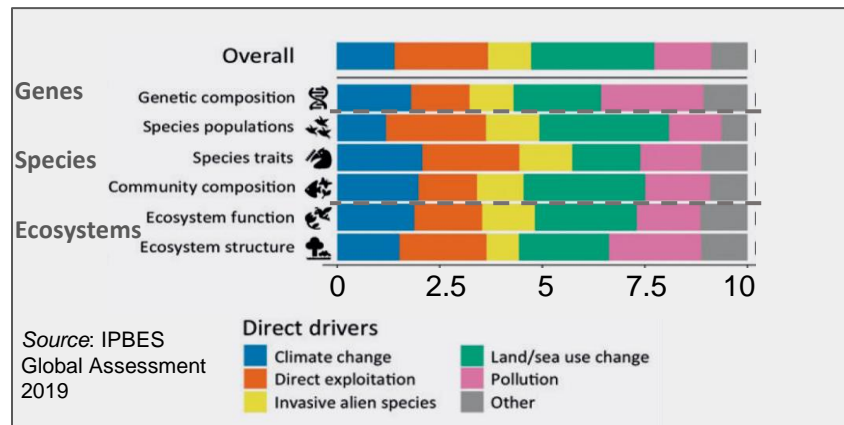# Finding 1 - *Action targets are linked to multiple milestones and goals*

Finding 3 - *All five main direct drivers of biodiversity loss have substantial impacts on biodiversity*

Source: IPBES Global Assessment 2019

Component	CC	Exp	IAS	LSUC	Pol	Total
Ecosystem (A1)	1.9	2.1	1.3	2.5	2.2	*10*
Species (A2)	2.0	2.3	1.4	2.7	1.6	*10*
Genes (A3)	2.1	1.6	1.3	2.4	2.7	*10*
Overall weight	*6.0*	*6.0*	*4.0*	*7.6*	*6.4*	
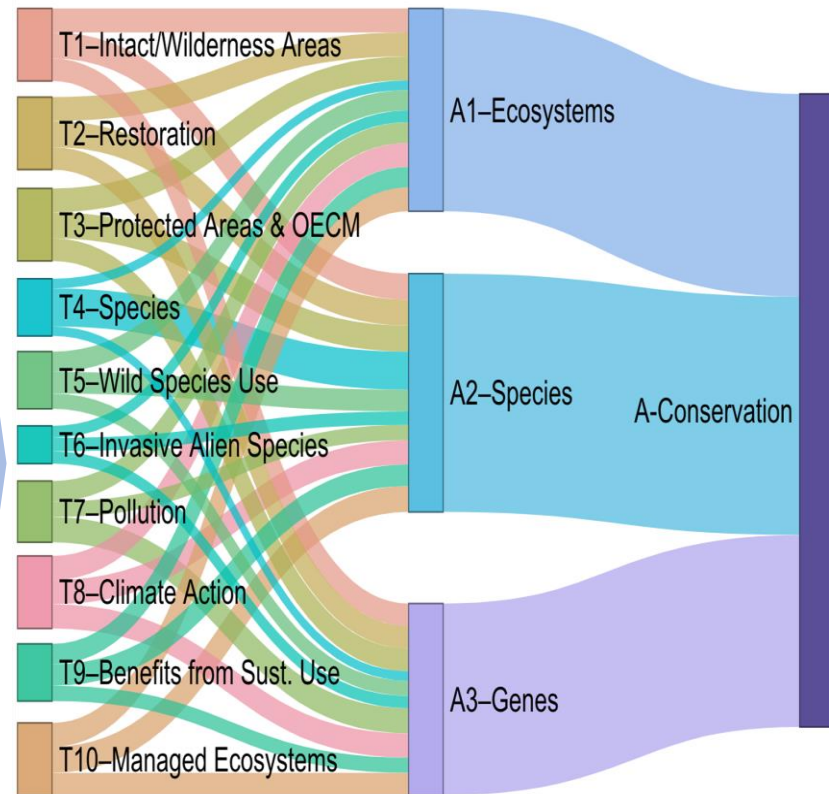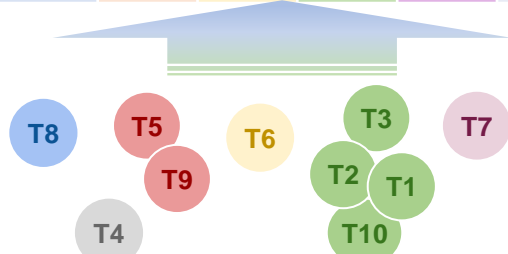
(see Appendix 1.1, page 145)

Finding 3 - *All five main direct drivers of biodiversity loss have substantial impacts on biodiversity*
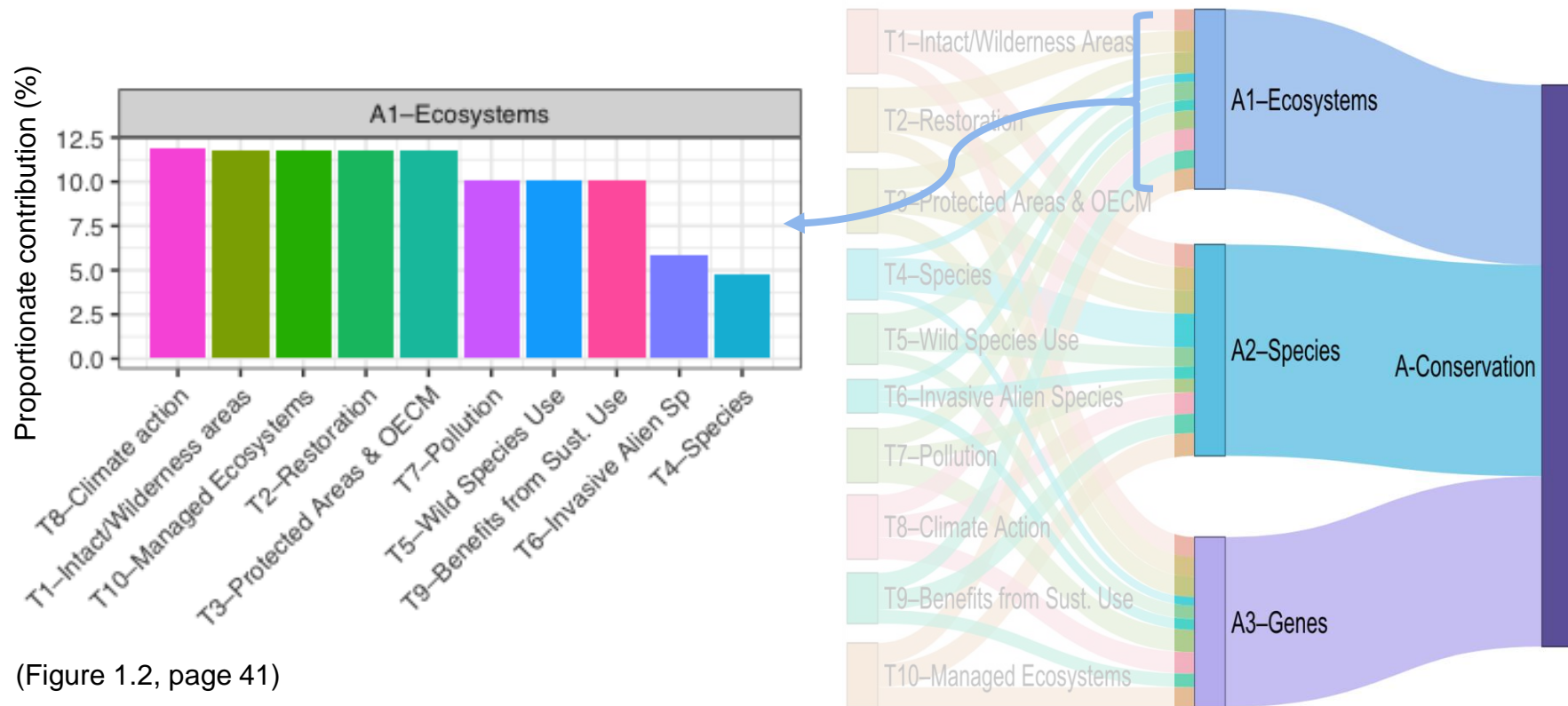
(Figure 1.2, page 41)

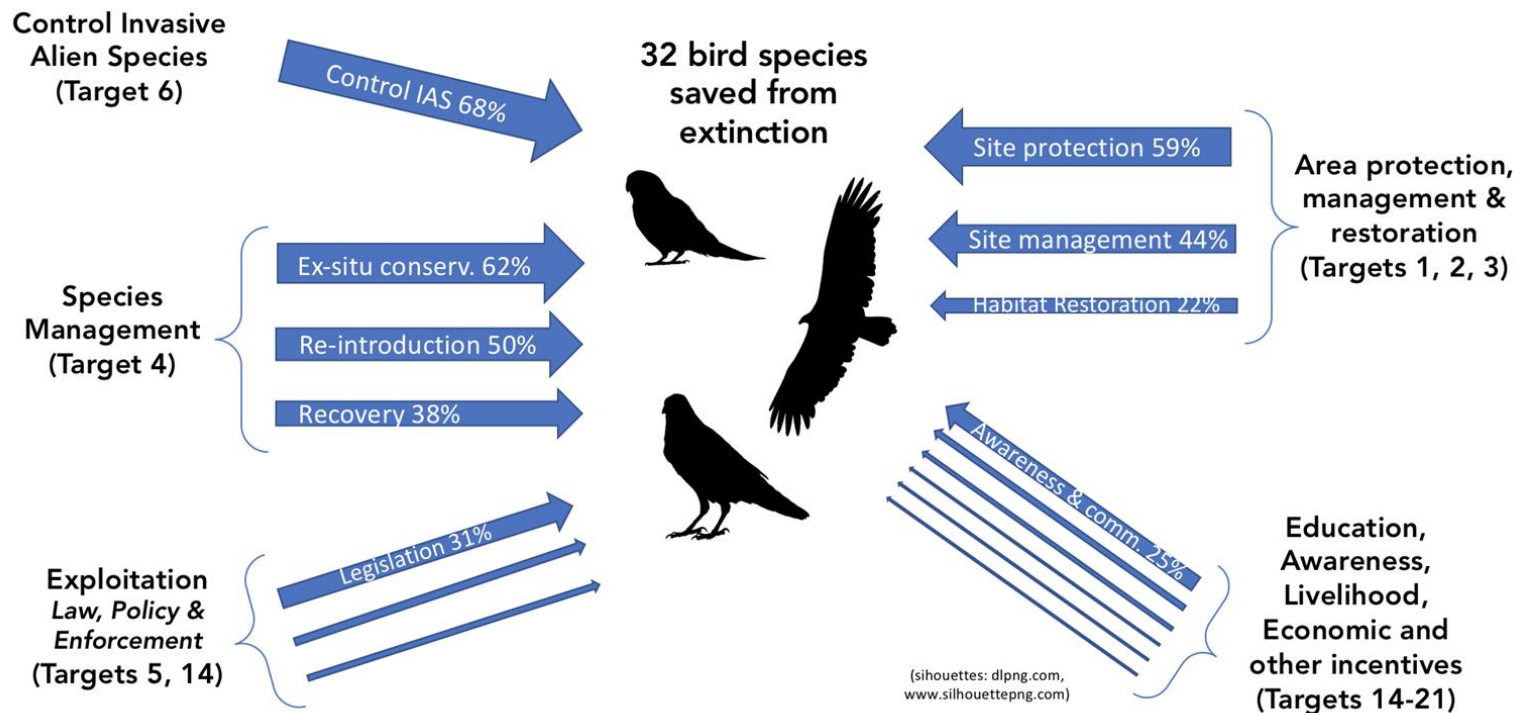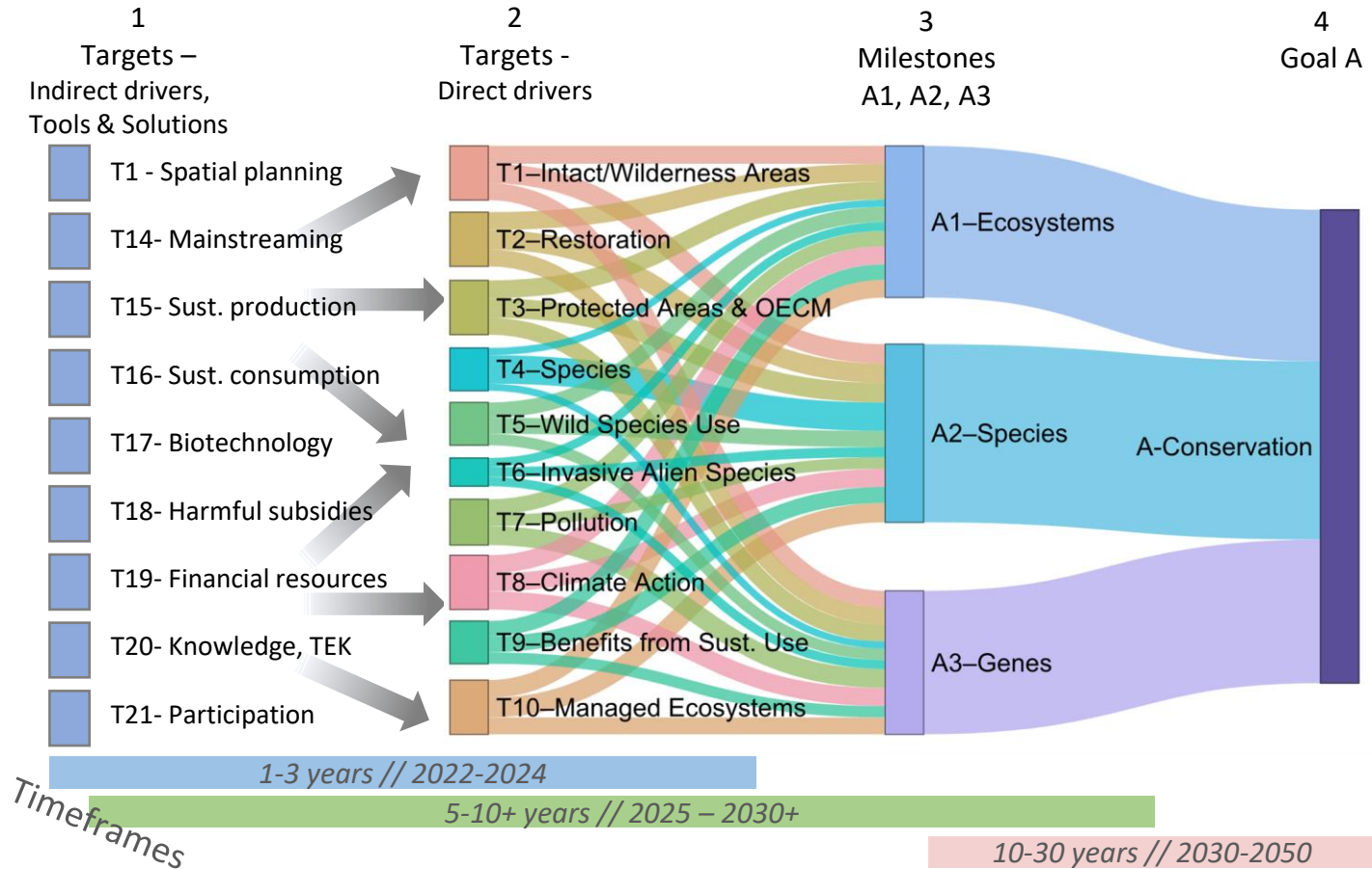# Finding 3 - *Direct drivers - example of avoiding extinctions*

Redrawn from Bolam et al. *(2021). Upper estimate of avoided bird extinctions between 1993-2020*

Connecting indirect and direct drivers, and timing

Finding 2 - *Transformative change is essential*

This requires quick, sweeping changes in indirect drivers such as:
- sustainable production and consumption especially for food systems,
- deep cuts in harmful subsidies,
- mainstreaming of biodiversity,
- substantial increases in resources for conservation and restoration.

Transformative change implies high ambition and, if possible, quantitative objectives for Targets 9-21.

Evidence base:
- Recent trends in drivers and biodiversity: IPBES Global Assessment, Global Biodiversity Outlook 5 & recent publications
- Global sustainability scenarios that explicitly address biodiversity: a synthesis of very recent studies

Three scenario types and their projected outcomes for the 2030 biodiversity Milestones

Targets (T)	Target elements	Scenario Type		
		Continued Trends (+30% PA)	Conservation & Restoration	Transformative Change
		Assumptions for scenario types		
Protected areas (T3)	Area (30%)	🟩	🟩	🟩
	Effective & Representative	🟨	🟩	🟩
Restoration, spatial planning & species management (T1, 2, 4)	----	🟨	🟩	🟩
Sustainable use, pollution, invasive species, implementation and mainstreaming	----	🟥	🟥	🟩

Progress on Milestones and Targets

None or Little	🟥
Modest	🟨
Good or very good	🟩

NOTE: Failure to limit climate change to 1.5°C greatly compromises meeting 2050 Goals.

Three scenario types and their projected outcomes for the 2030 biodiversity Milestones

Progress on Milestones and Targets

None or Little	🟥
Modest	🟨
Good or very good	🟩

* = part of 2050 Goal, but not Milestone A.1
** = high uncertainty - not addressed in scenarios reviewed

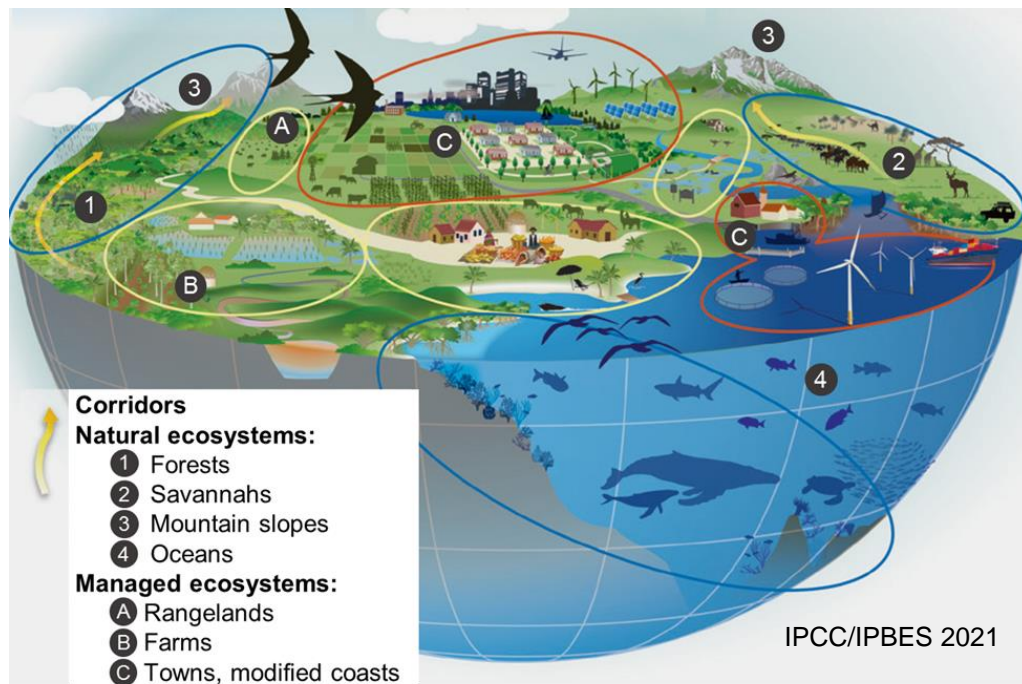|		Scenario Type		
Targets (T)	**Target elements**	**Continued Trends** (+30% PA)	**Conservation & Restoration**	**Transformative Change**
		Assumptions for scenario types		
Protected areas (T3)	*Area (30%)*	🟩	🟩	🟩
	Effective & Representative	🟨	🟩	🟩
Restoration, spatial planning & species management (T1, 2, 4)	----	🟨	🟩	🟩
Sustainable use, pollution, invasive species, implementation and mainstreaming	----	🟥	🟥	🟩
Dimension of biodiversity	**Milestone elements**	**Progress towards 2030 biodiversity Milestones**		
Ecosystems	*Area (natural)*	🟨	🟩	🟩
	Integrity (natural)	🟥	🟨	🟩
	Connectedness	🟥	🟨	🟩
	Managed ecosystems*	🟥	🟥	🟩
Species	*Extinction rate*	🟥	e.g., Birds, Mammals 🟩	🟩
			e.g., Invertebrates 🟨	
	Theatened status	🟥	🟨	🟩
	Abundance	🟥	🟨	🟩
Genetic diversity**	*Wild*	🟥	🟨	🟩
	Domesticated	🟥	🟥	🟩

Finding 4 - *Act across levels*

Implementation at international, national and local levels will be a primary determinant of the GBF's success

- How global numerical targets are defined at other levels will be key (e.g., PAs, pollution).

- There is a need for flexibility to adapt the implementation of targets to local and national levels.

- There is a need to assess how actions at different scales contribute to achieving global targets and goals.

- Regular evaluation and adaptive implementation of the targets.
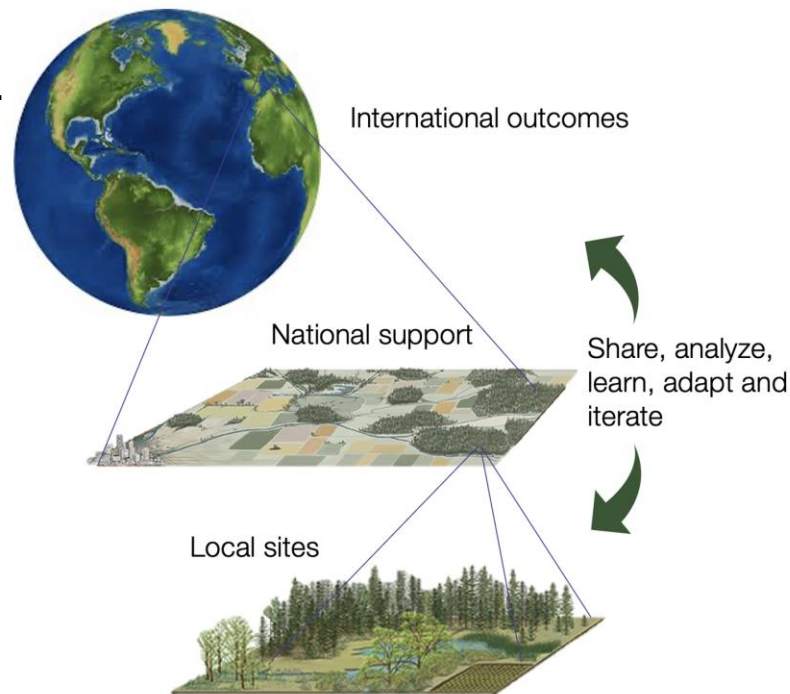
Finding 5 - *Include managed ecosystems*

Threats to biodiversity need to be addressed in *both* natural and managed ecosystems, as well as the interconnections between them.

Corridors
Natural ecosystems:
1. Forests
2. Savannahs
3. Mountain slopes
4. Oceans
Managed ecosystems:
A. Rangelands
B. Farms
C. Towns, modified coasts

IPCC/IPBES 2021

The contributions of managed ecosystems, and the mosaic of natural habitats within them, could be better reflected in the Global Biodiversity Framework, *e.g.*, by adding managed ecosystems and their integrity in Milestone A.1.

Finding 6 - *Act on all dimensions of biodiversity*

- All dimensions of biodiversity show interlinked responses to human drivers.

- Actions for one dimension can support outcomes at other dimensions: important to consider when designing and monitoring actions and outcomes.

Biosphere

Biome

Ecosystem

Community

Population

Individual

Gene

Dasgupta 2021
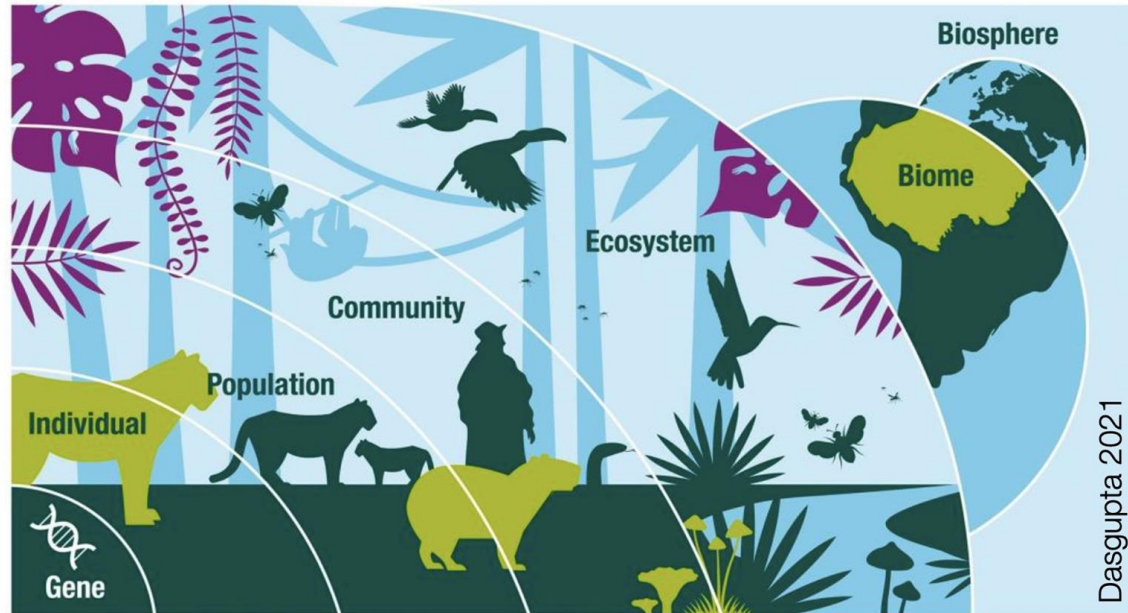
Changing variation   Abundance & rarity   Composition

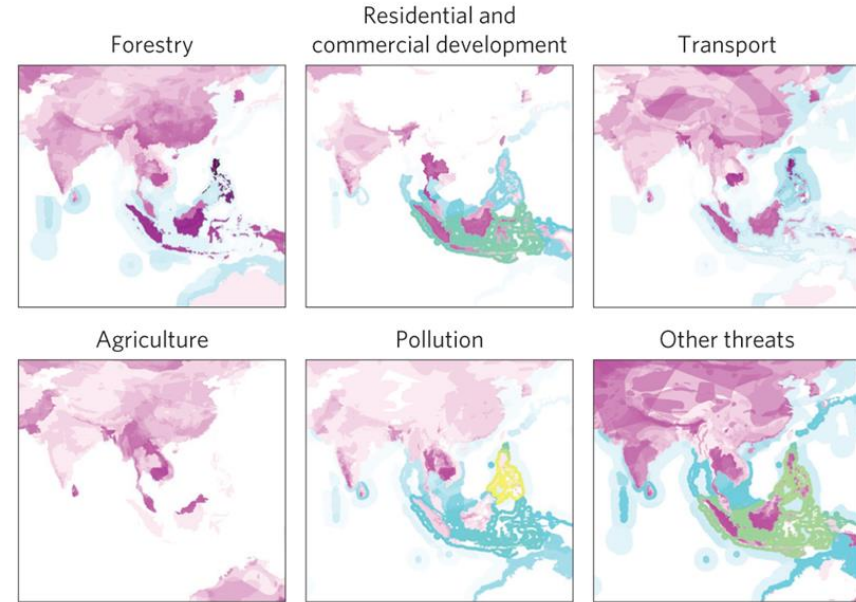# Finding 7 - *Immediate & sustained action to ensure recovery*

Ambitious action is needed immediately and must be sustained over time if we are to put biodiversity on a trend to recovery by mid-century.

- Time lags in biodiversity response exist both for decline and recovery. Some dimensions of biodiversity recover rapidly following conservation action, others show long-lasting, time-delayed responses to drivers.

- Recovery rates slow down with time post disturbance, meaning the final stage of recovery is the most challenging to achieve requiring persistent and lasting action.

Moreno-Mateos *et al.* (2017) *Nature Communications*
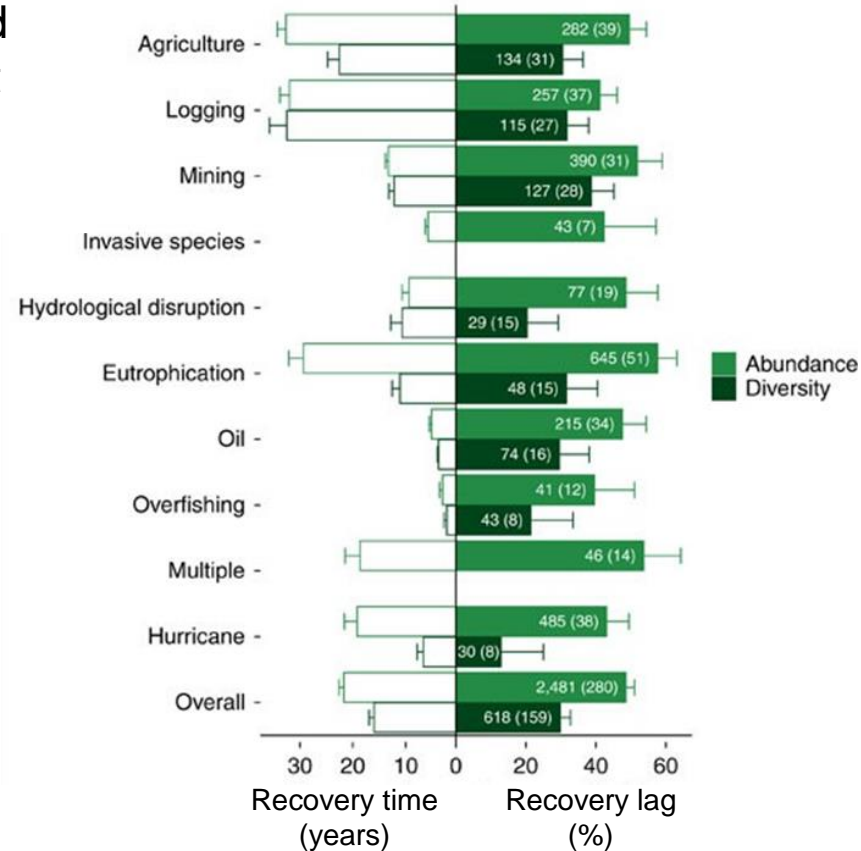
Finding 8 - *Coordinate actions across scales*

- The degree of biodiversity change, and relative importance of drivers, vary greatly across scales and from place to place, and drivers in one place can affect biodiversity in another.

- Mechanisms that account for global biodiversity, responsibilities and response capacities will need to be established to ensure fair sharing of conservation burden among countries.

- International collaboration should be strengthened, and more focused than it is now, on how to adequately and equitably share the efforts in mitigating drivers of, and reversing, biodiversity loss.

Forestry   Residential and commercial development   Transport

Agriculture   Pollution   Other threats

Global species threat hotspots linked to consumption abroad

Moran & Kanemoto (2017)
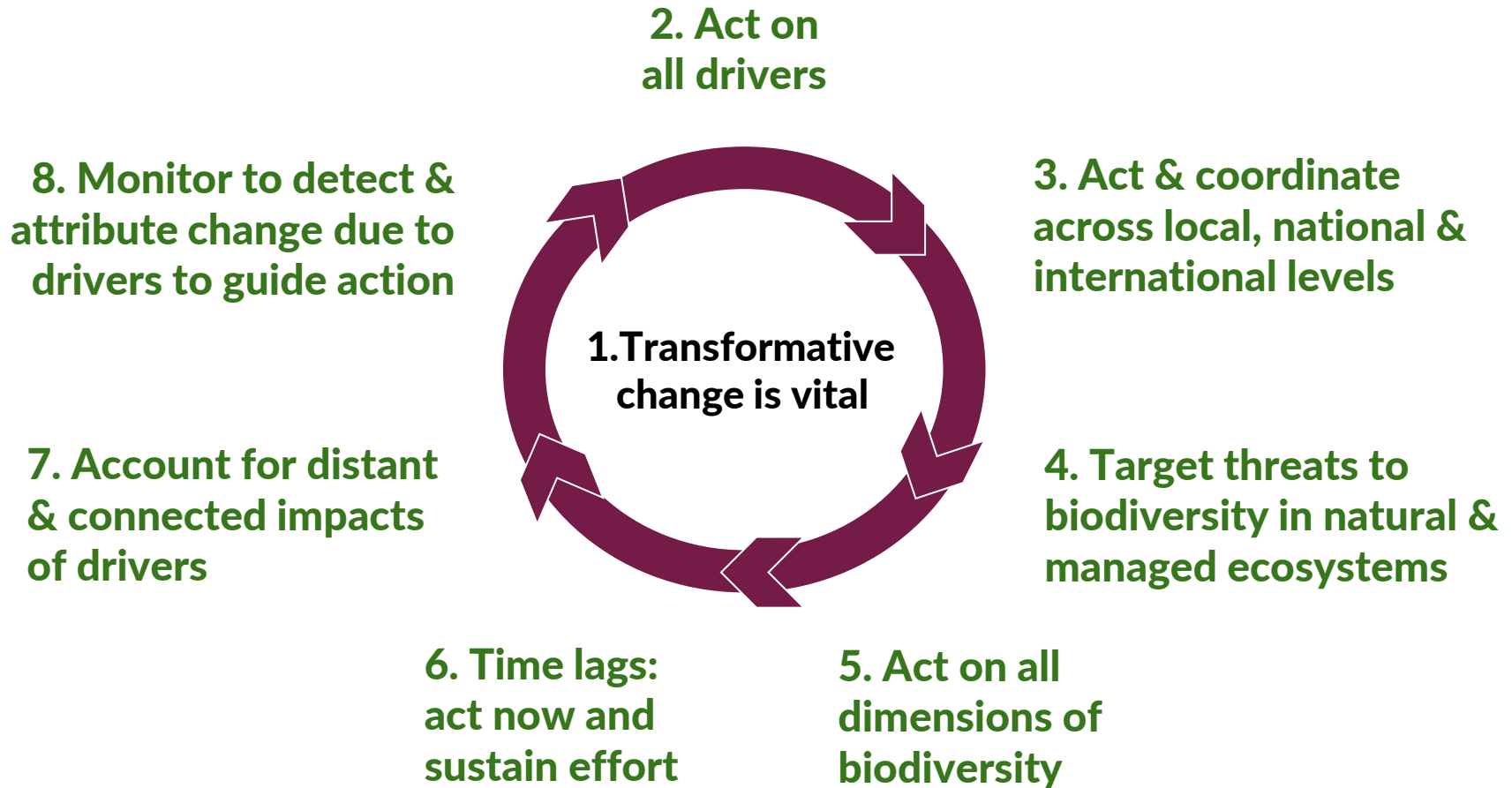*Nature Ecology & Evolution*

Finding 9 - *Invest in monitoring*

Successful implementation of the GBF requires investment in monitoring to allow the detection of trends worldwide and the attribution of these trends to drivers in terrestrial, freshwater and marine ecosystems.
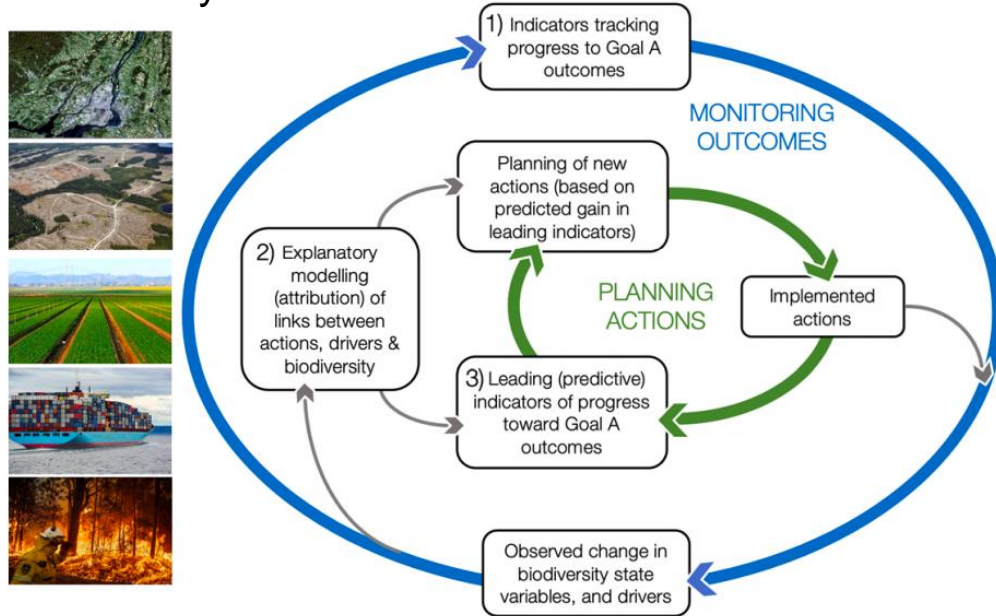
Indicators are needed not only to assess progress toward goals and targets, but also to inform strategic planning of actions to most effectively and efficiently achieve outcomes

8 Key Messages

2. Act on all drivers

3. Act & coordinate across local, national & international levels

8. Monitor to detect & attribute change due to drivers to guide action

1.Transformative change is vital

7. Account for distant & connected impacts of drivers

4. Target threats to biodiversity in natural & managed ecosystems

6. Time lags: act now and sustain effort

5. Act on all dimensions of biodiversity

Report available as

CBD/WG2020/3/INF/11

https://www.cbd.int/doc/c/16b6/e126/9d46160048cfcf74cadcf46d/wg2020-03-inf-11-en.pdf

CBD/SBSTTA/24/INF/31

https://www.cbd.int/doc/c/5735/c241/efeeac8d7685af2f38d75e4e/sbstta-24-inf-31-en.pdf

Open Discussion / Q & A