

Photo: Saxifraga-
Rudmer Zwerver



VU University Amsterdam



UNIVERSITY OF HELSINKI



Planbureau voor de Leefomgeving

Is the EU biodiversity policy climate proof?

Astrid van Teeffelen, Laura Meller, Jelle van Minnen, Jan Vermaat, Rob Alkemade, Frits Hellmann, Mar Cabeza

Hamburg, 19 march 2013, European Climate Change Adaptation Conference



RESPONSES

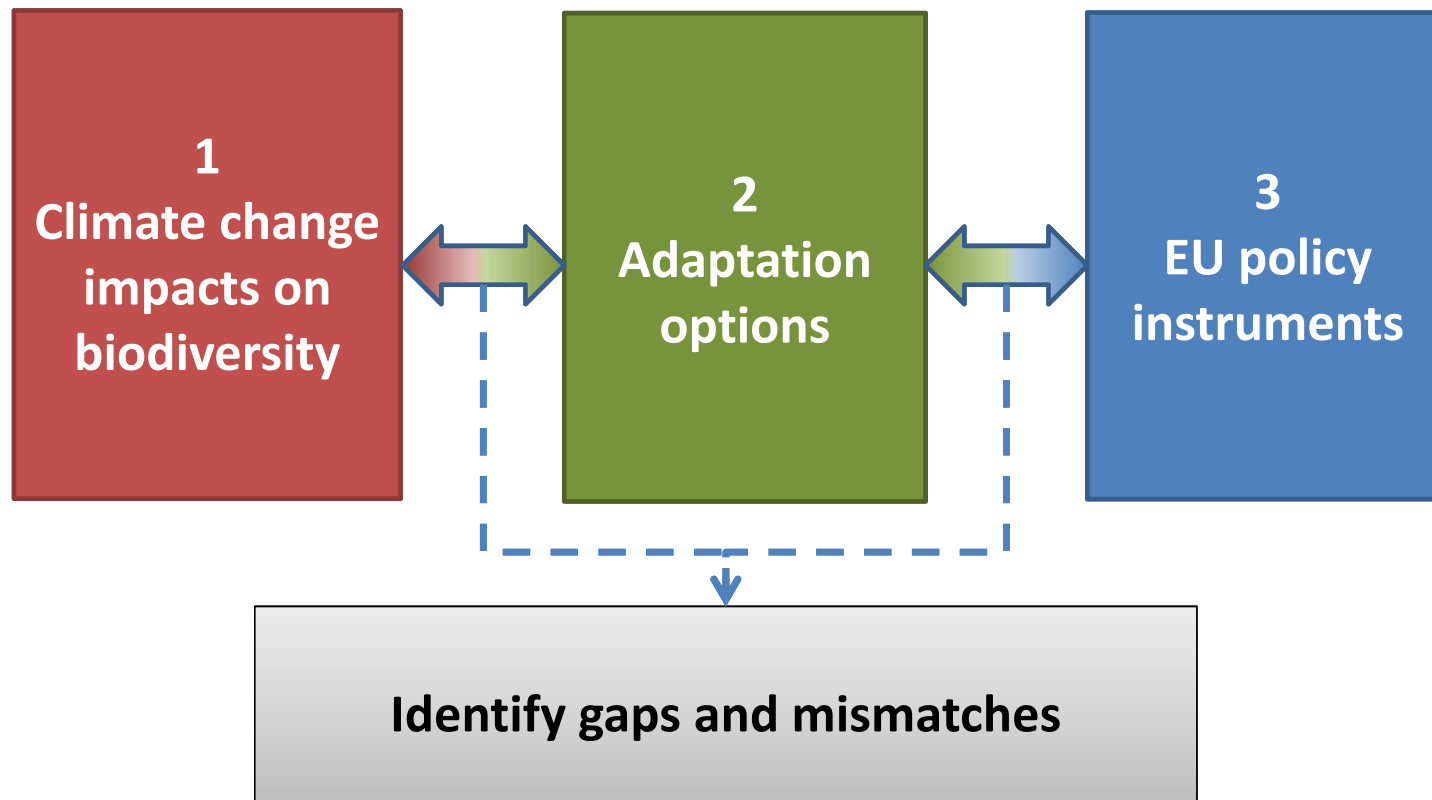
Introduction

EU 2010 target to halt the loss of biodiversity failed

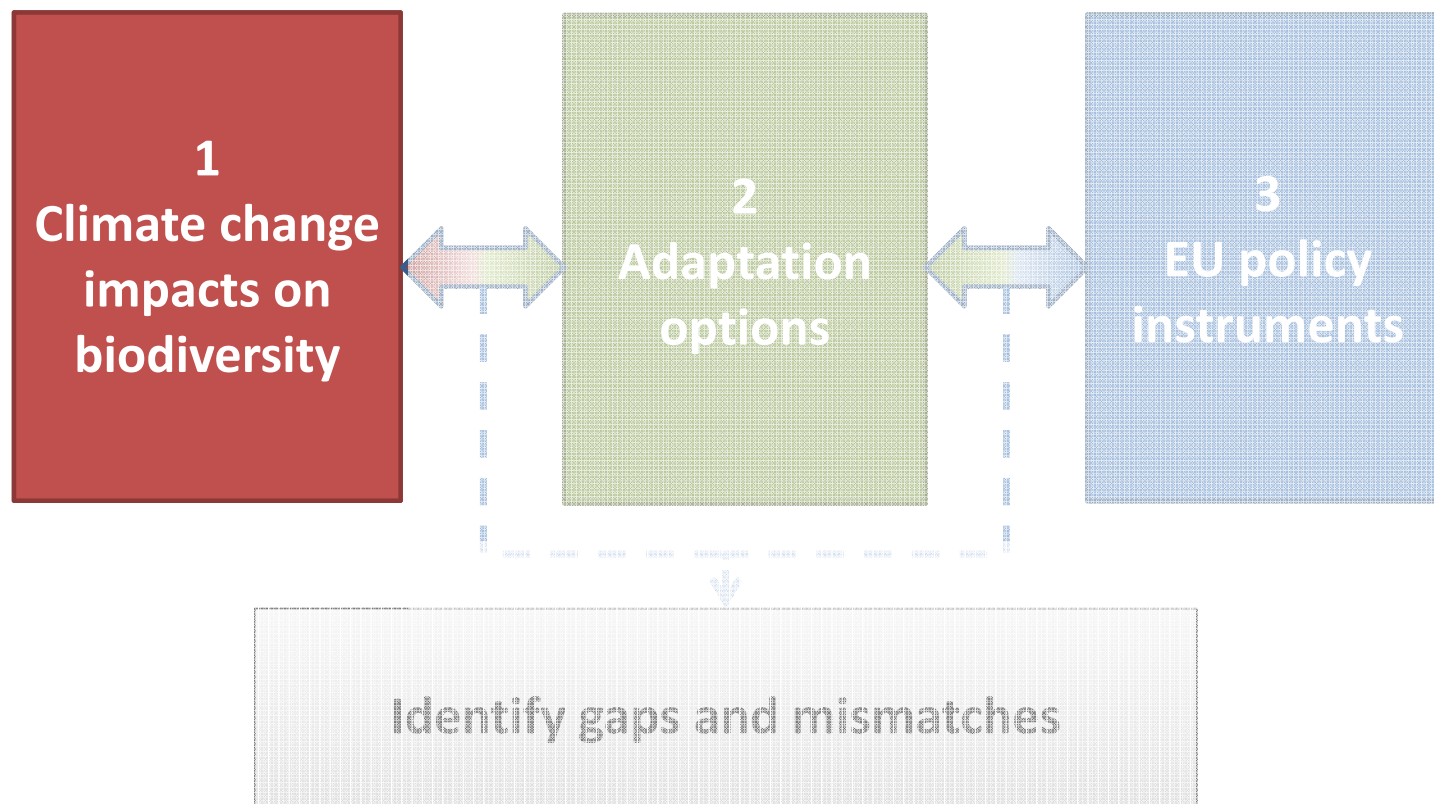
New EU 2020 target to halt the loss of biodiversity

Climate change is one of the important challenges

Meeting the challenge requires insights on:

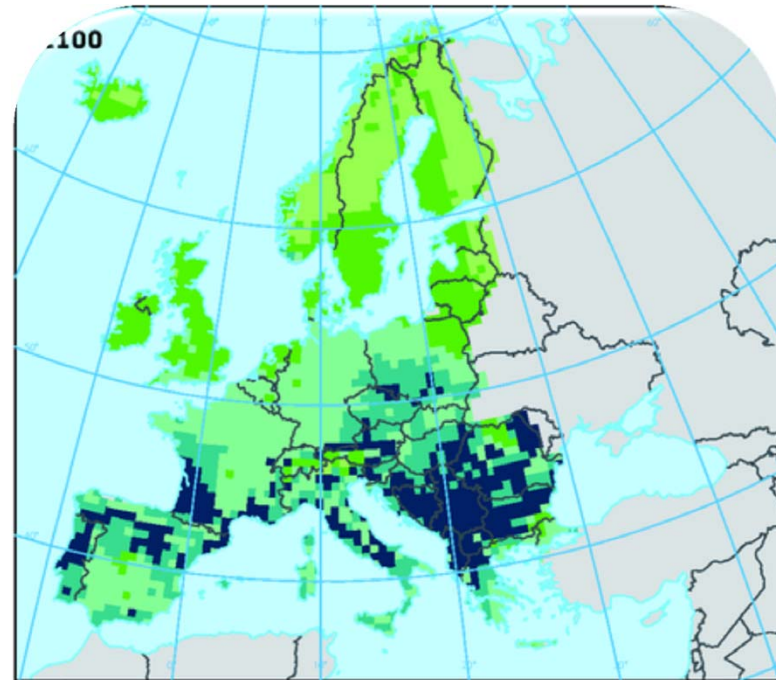


1. Climate impacts

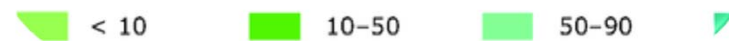


1. Climate impacts

Changes in species distributions:
Shifts, contractions and expansions



Number of plant species lost (left) and species gained (right)



1. Climate impacts

Changes in species distributions:
Shifts, contractions and expansions

Phenological shifts

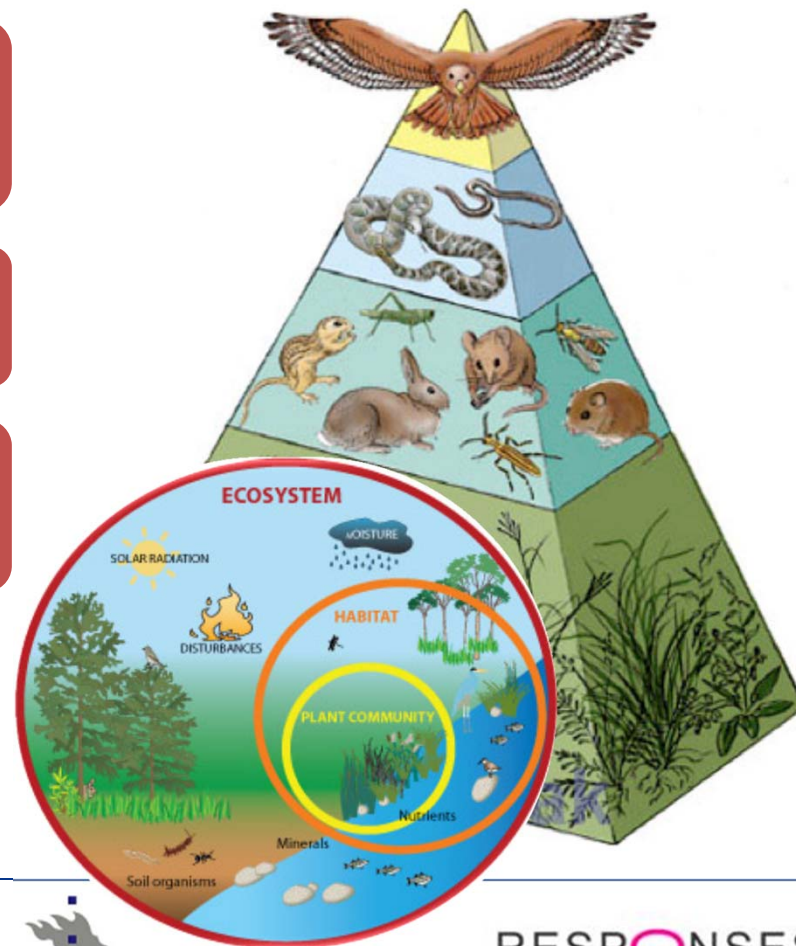


1. Climate impacts

Changes in species distributions:
Shifts, contractions and expansions

Phenological shifts

Changes in communities and
ecosystems



1. Climate impacts

Changes in species distributions:
Shifts, contractions and expansions

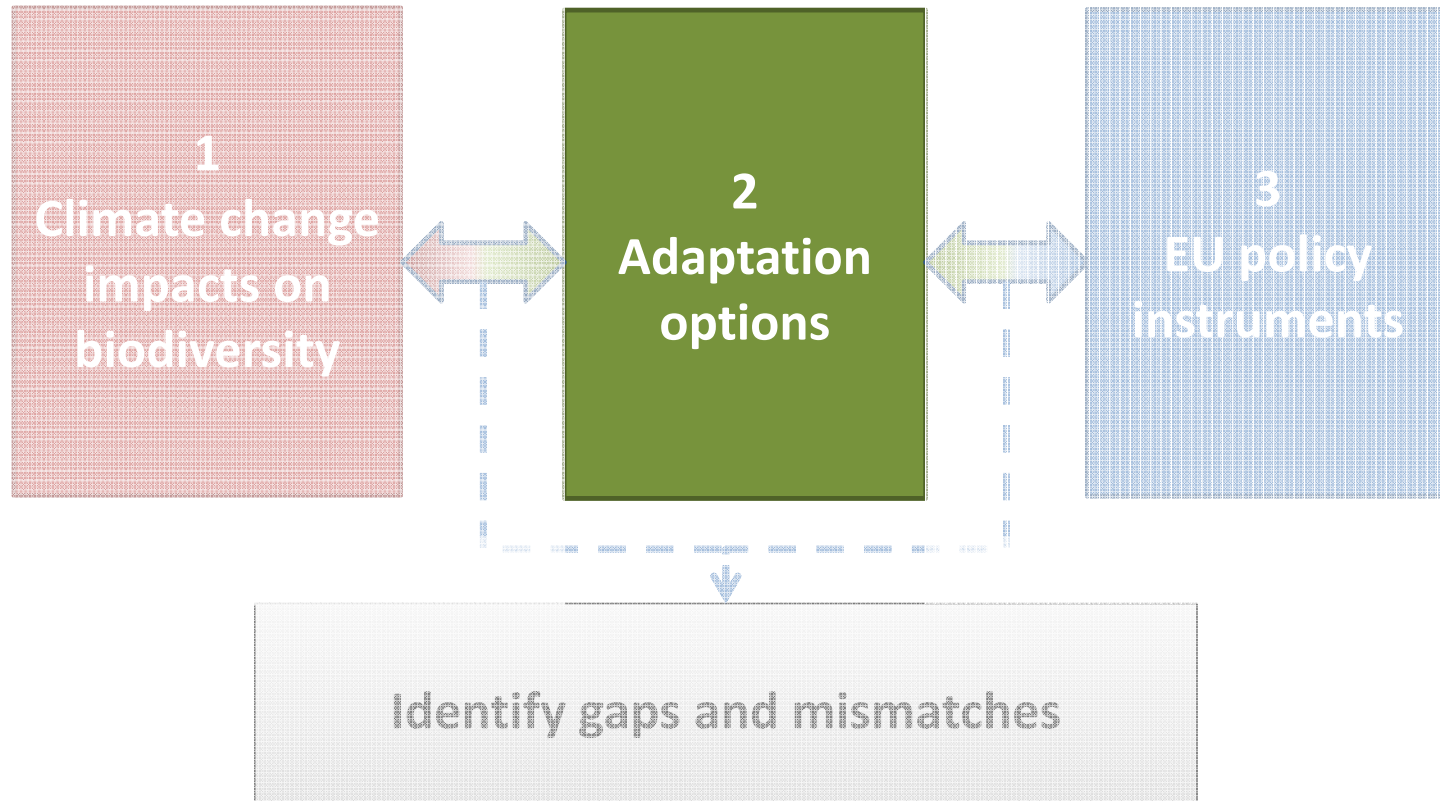
Phenological shifts

Changes in communities and
ecosystems

Indirect impacts through land use
change



2. Adaptation options



2. Adaptation options

Various literature reviews, for example Heller & Zavaleta (2009 Biological Conservation) list 104 adaptation options.

Include many recommendations for research, education, institutional reforms etc.

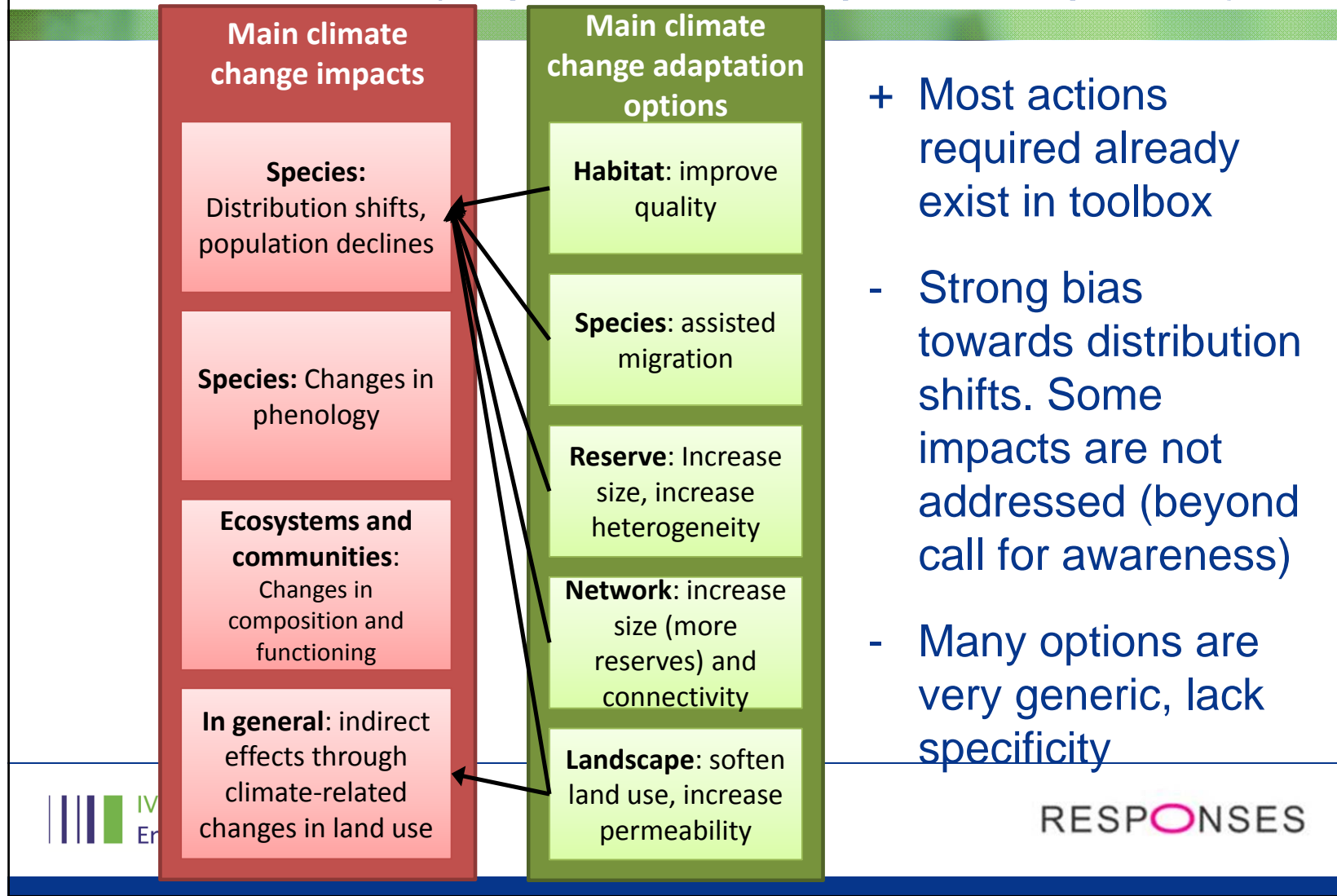
Of the specific conservation recommendations, we grouped these options in 5 categories, and linked them to the four types of impacts.

2. Adaptation options

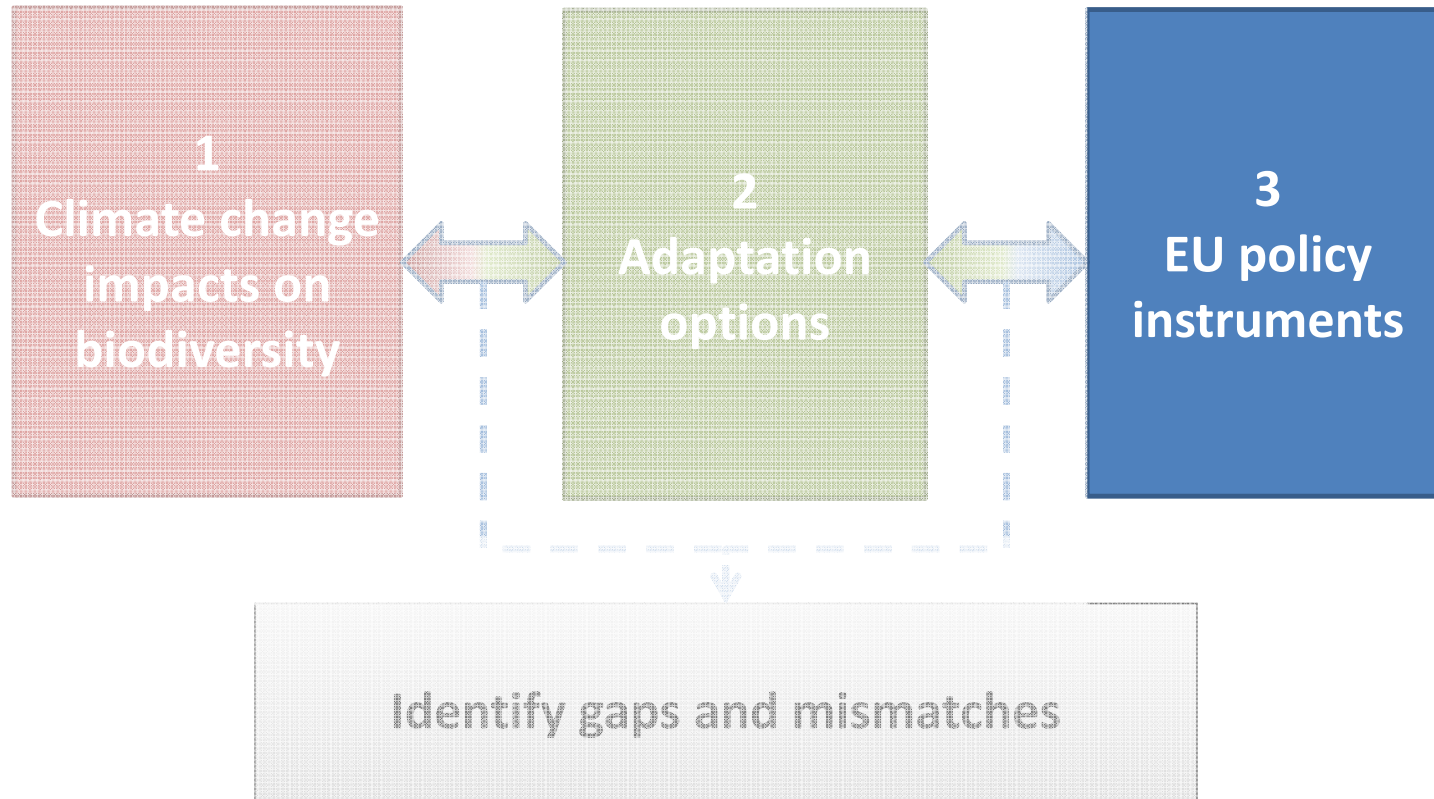
		Impacts addressed (<i>n</i> options)			
		Distribution shifts (12)	Phenological shifts (2)	Community change (5)	Responses in other sectors (4)
Adaptation option category (<i>n</i> options)	Strengthen reserve networks (9 options)	<i>'increase connectivity'</i>			
	Promote resilience and adaptive capacity (22)	<i>'practice adaptive management'</i> <i>'manage the matrix'</i>	<i>'anticipate surprises and threshold effects'</i>	<i>'design reserves for complex changes in time'</i>	
	Identify priority areas for extending networks (11)	<i>'locate reserves at northern boundary of species ranges'</i>		<i>'locate reserves in areas of high endemism'</i>	
	Reduce pressures (5)				<i>'avoid harmful CO₂ mitigation measures'</i>
	'Kiss of life' options (4)	<i>'Translocate species'</i>			

UNIVERSITY OF HELSINKI

Conclusions (impacts vs adaptation options)



3. EU law



3. EU law

Limitation: We consider the Habitats Directive and the Birds Directive only, as the core of the EU biodiversity legislation.

→ Review of scientific literature (2008 – 2013) on EU Birds Directive and Habitats Directive in context of climate change.

Although other policy domains have a role to play, for example:

- *Common Agricultural Policy*
- *Cohesion Policy*
- *Water Framework Directive*

3. EU law

Studies concentrate on a relatively small, albeit important, number of adaptation options:

Connectivity of Natura 2000

Habitat restoration

Re-assess policy goals

3. EU law -

Connectivity of Natura 2000

Debate on legal obligation for connectivity:

- Options to realise the coherence are included in the BD / HD
- Left at the discretion of the member states (i.e. voluntary)
- Jurisprudence Eur. Court of Justice: legal obligation for Member states to establish adequate connectivity acc. to HD.
- Even so, provisions are phrased rather weakly

Despite debate, highly urgent adaptation. EU takes action via Green Infrastructure strategy, also CAP and Cohesion Policy play key role. Member States have to take action.

3. EU law –

Habitat restoration

Obligatory in current legislation, but:

- Specificity regarding requirements is lacking
- Only biodiversity offsets are explicitly regulated in a legally binding way.
- Offset instrument could be applied more proactively and there is a need for clearer guidance if the EU target of restoring at least 15% of degraded ecosystems by 2020 is to be achieved.

Make MS duty to develop robust restoration policies more explicit, e.g. via Common Agricultural Policy

3. EU law -

Re-assess policy goals

Some related issues including:

1. Annexes to Habitats Directive are not up to date.

Up-to-date = required for effective conservation and adaptive management

2. Static implementation of Natura 2000

current practice focuses on particular species at particular locations, ignoring inherent dynamics of ecosystems, which will be exacerbated by climate change.

*Alternatives: Shift from pattern-oriented towards process-oriented, -
“may take away the teeth of both Directives”*

Conclusions (options vs legislation)

- + **Several options exist in present legal framework,**
- **but they are either voluntary or perceived as such. Enforcement and guidance necessary.**
- **The narrow focus on species-habitat composition hinders its potential to conserve biodiversity under climate change.**

Main climate change adaptation options

Habitat: improve quality

Species: assisted migration

Reserve: Increase size, increase heterogeneity

Network: increase size (more reserves) and connectivity

Landscape: soften land use, increase permeability

Key EU policy instruments

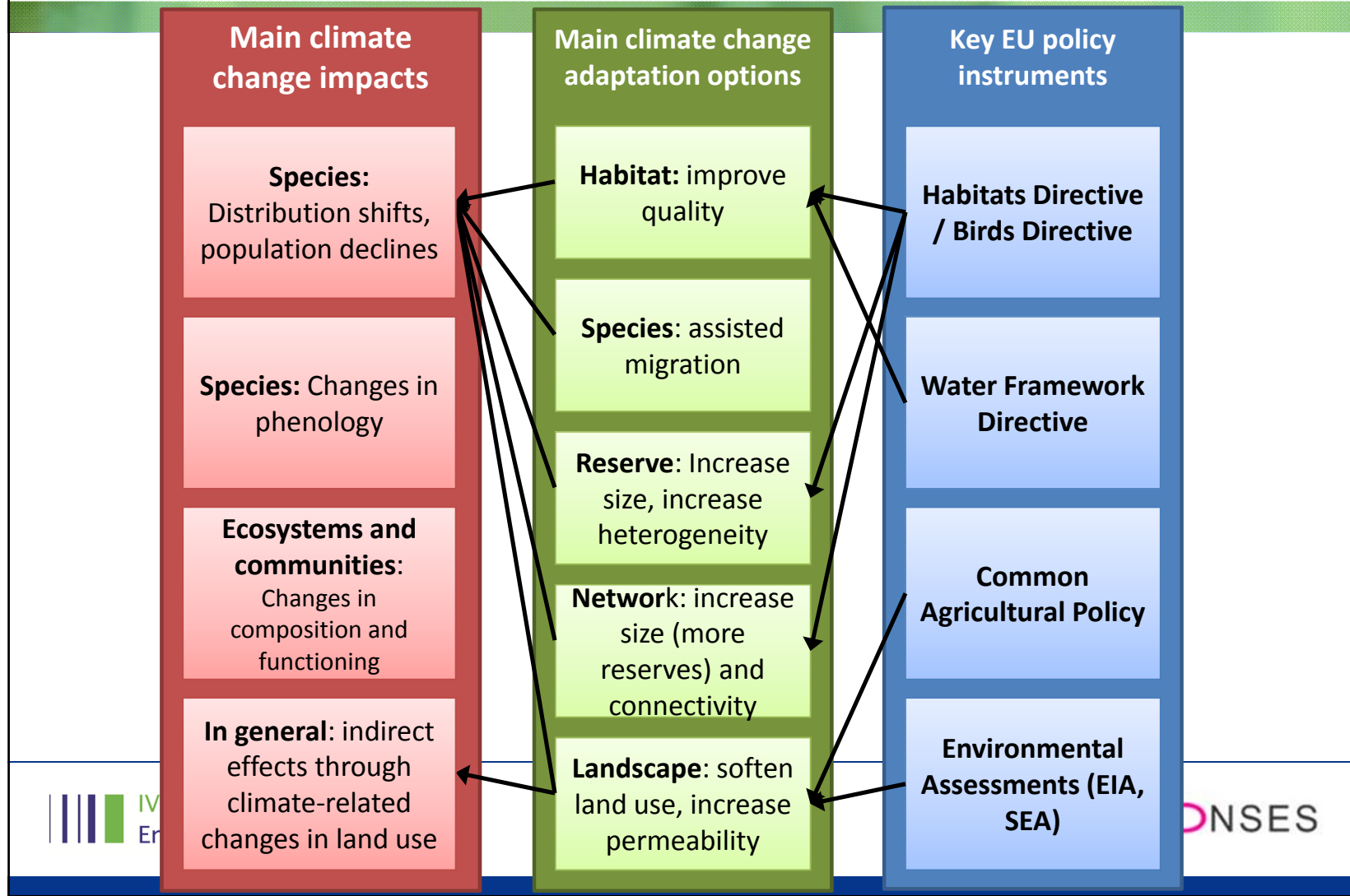
Habitats Directive / Birds Directive

Water Framework Directive

Common Agricultural Policy

Environmental Assessments (EIA, SEA)

Conclusions



Thank you!

Photo: Saxifraga-
Rudmer Zwerver

Financial support:

- RESPONSES EU-FP7 grant# 244092

Contact: astrid.van.teeffelen@vu.nl

Website: www.responsesproject.eu

