



# Ecosystems and their services- building the knowledge base-EEA Scientific Committee seminar. The Policy Context.

Patrick Murphy, Biodiversity Unit/  
DG Environment  
European Commission



## The 7<sup>th</sup> EAP living well, within the limits of our planet.

- Priority Objective 1-To protect, conserve and enhance the Union's natural capital.
- The Union's economic prosperity and well-being is underpinned by its natural capital, i.e. its biodiversity, including ecosystems that provide essential goods and services-----



## 7<sup>th</sup> EAP and Natural Capital Accounting

- Priority Objective 6-To secure investment for environment and climate policy and address environmental externalities.
- Work to develop a system of environmental accounts including physical and monetary accounts for natural capital and ecosystem services will need to be stepped up.



## 7<sup>th</sup> EAP and Natural Capital Accounts-(2)

- The value of natural capital and ecosystem services as well as the costs of their degradation are properly assessed and considered in policy making and investments.
- Developing and applying alternative indicators---to integrate economic indicators with environmental and social indicators, including by means of natural capital accounting.



# The EU biodiversity strategy

## 2050 Vision

*By 2050, EU biodiversity and the ecosystem services it provides-its natural capital-are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided.*



# The EU biodiversity strategy

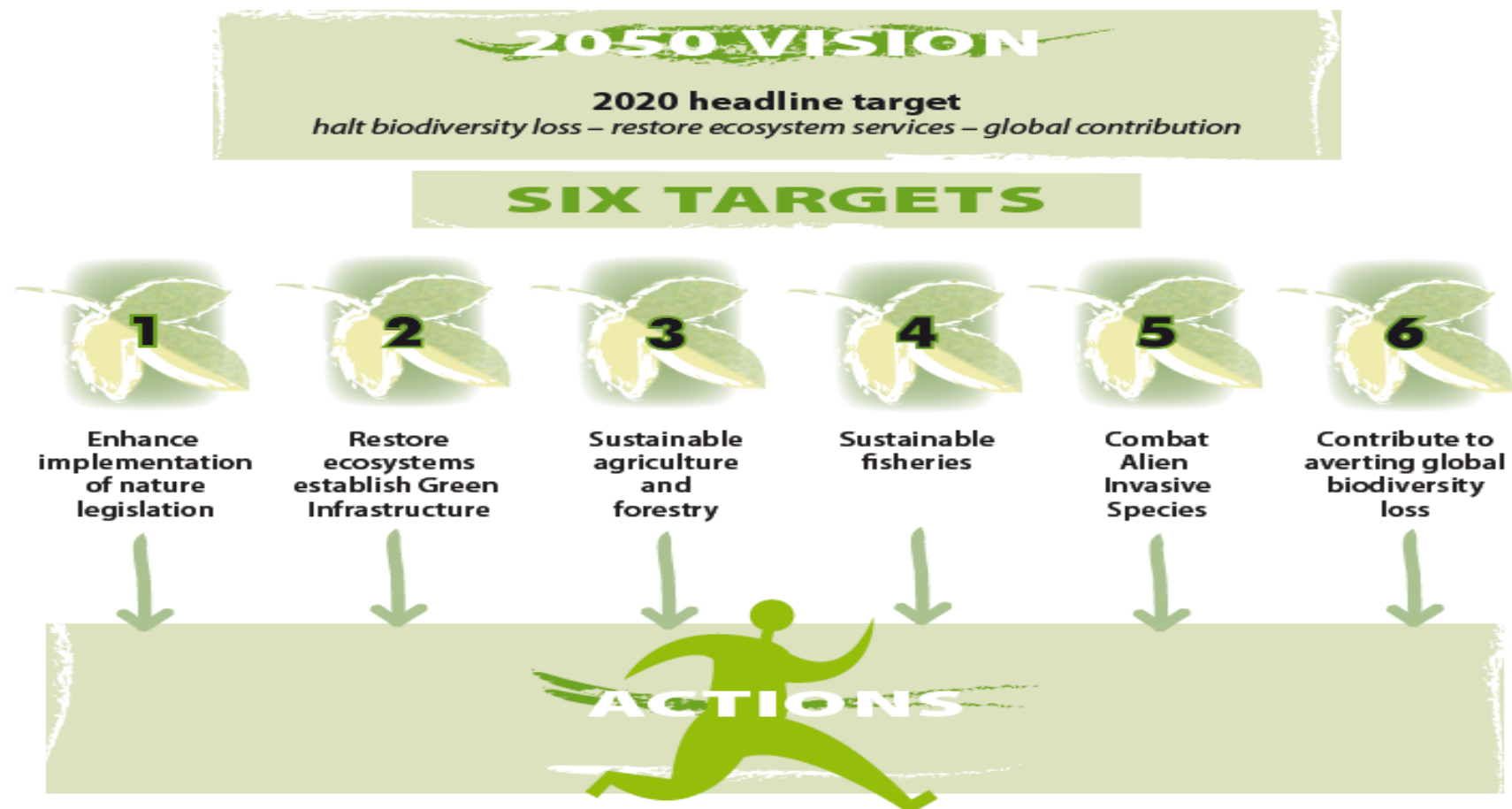
## 2020 Headline Target

*Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as is feasible, while stepping up the EU contribution to averting global biodiversity loss*



# EU Biodiversity Strategy to 2020

## Structure of the EU 2020 Biodiversity Strategy



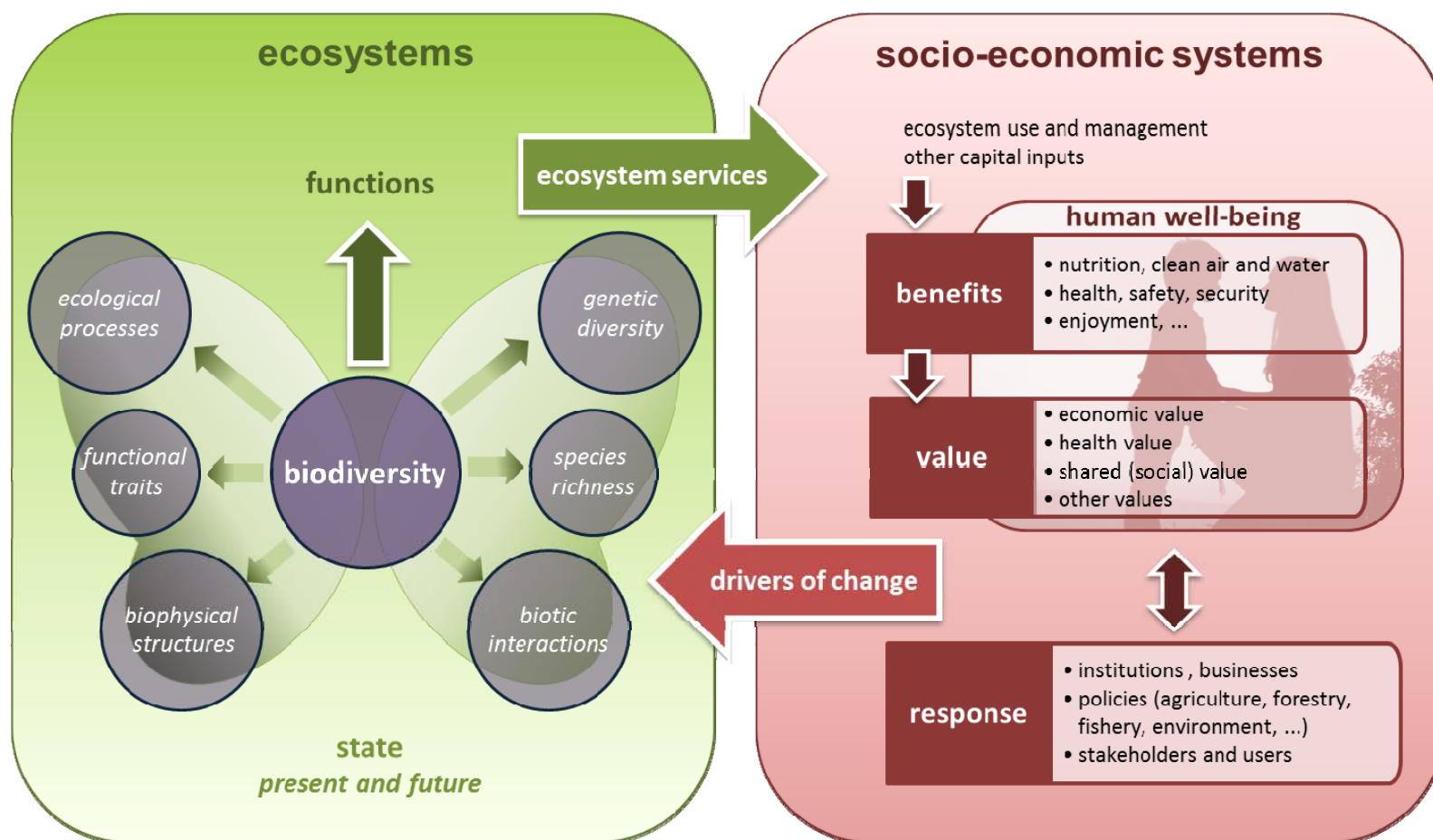


# What are we protecting, enhancing and restoring under the EU biodiversity strategy?

- Species and Habitats-conservation status.
- Biodiversity-quantity and quality?
- Ecosystems-condition.
- Ecosystem services-type, volume and value.
- Natural capital- stocks, flows and condition of the asset.



# Overall conceptual framework





# Ecosystem typologies and ecosystem services classification.

## Ecosystem types (EUNIS/CLC)

### Terrestrial

1. Urban
2. Cropland
3. Grassland
4. Woodland & forest
5. Heathland & shrub
6. Sparsely vegetated land

### Freshwater

7. Wetlands
8. Rivers and lakes

### Marine

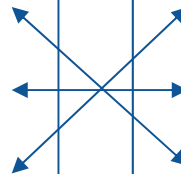
9. Marine inlets & transit. waters
10. Coastal
11. Shelf
12. Open ocean

## *Ecosystem services (CICES)*

### *Provisioning services*

### *Regulating (TEEB, MA) and Maintenance*

### *Cultural services*





## Target 1 of the EU biodiversity strategy

*To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100% more habitat assessments and 50% more species assessments under the Habitats Directive show an improved conservation status: and (ii) 50% more species assessments under the Birds Directive show a secure or improved status.*



## Target 2 of the EU biodiversity Strategy

*By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15% of degraded ecosystems*



# The Issue of the baseline

- The objectives and targets in the EU biodiversity strategy are formulated in terms of making positive change- this implies a point of reference against which change can be measured.
- What is the biodiversity baseline? Is the 2010 EU biodiversity baseline fit for purpose?



## Actions related to Target 2

- #5 Improve knowledge of ecosystems and their services-MAES-2014
- #6a- Framework for setting priorities for Restoration- 2014
- #6b- Green Infrastructure Strategy-by 2012
- #7a- Biodiversity Proofing -2014
- # 7b-No Net Loss of biodiversity and ecosystem services-initiative by 2015.

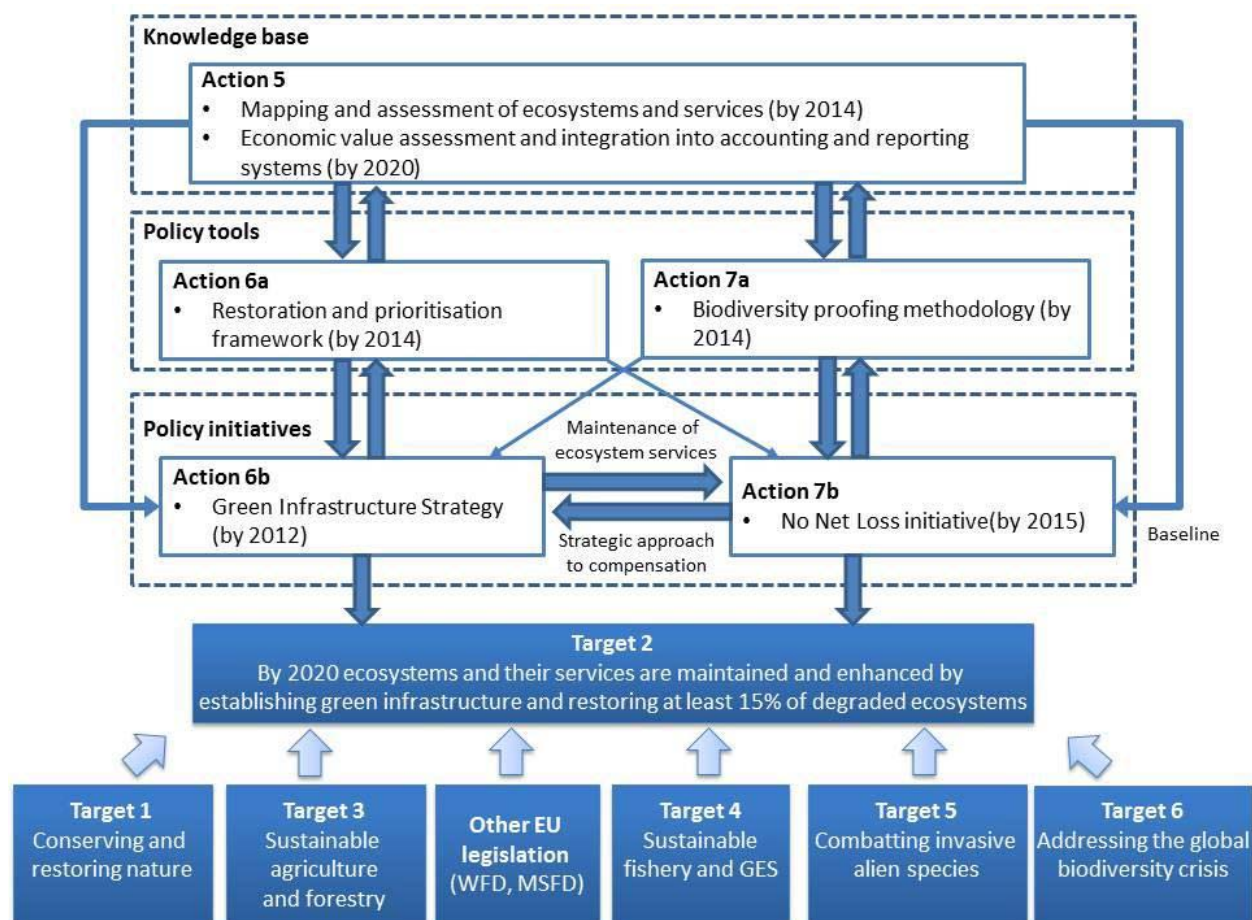




## Action 5 of the biodiversity strategy

Member States, with the assistance of the Commission, will map and assess the state of ecosystem services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020

# MAES in the Biodiversity Strategy





Are Europe's  
ecosystems in good  
shape to continue  
delivering essential  
ecosystem services?



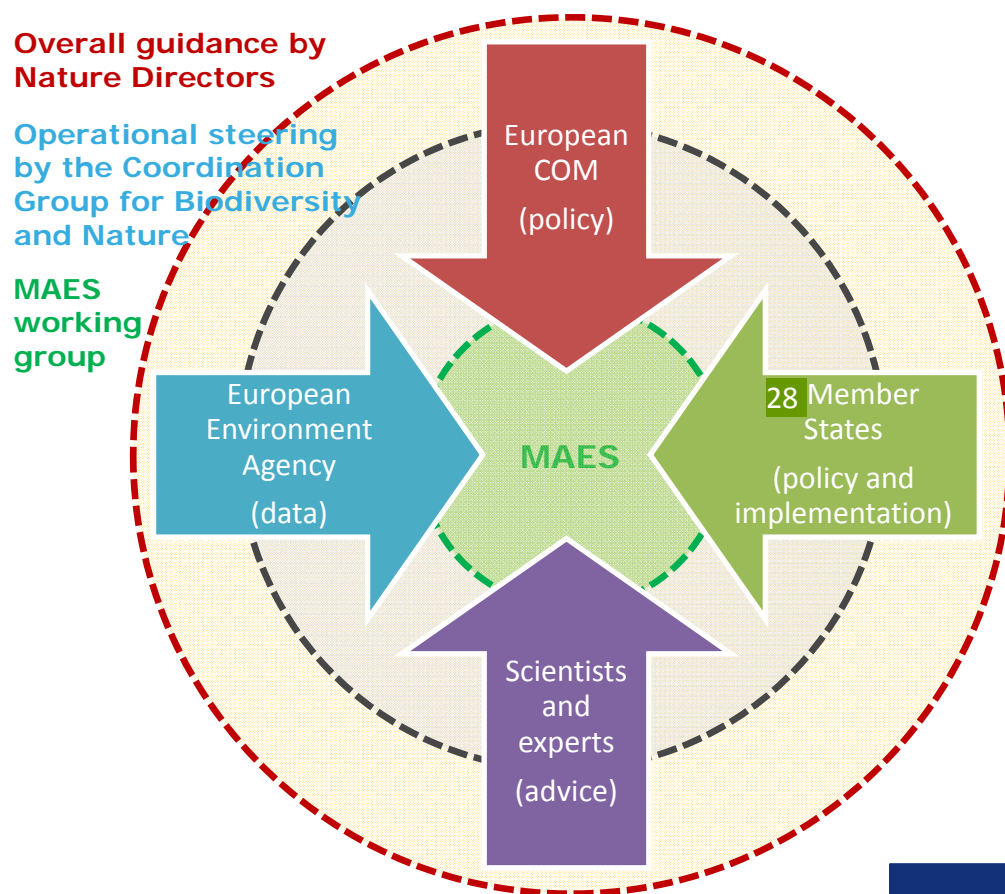
Can we value the  
flow of ecosystem  
services from  
ecosystems to  
society?



Which drivers of  
change increase or  
decrease the delivery  
of ecosystem  
services?

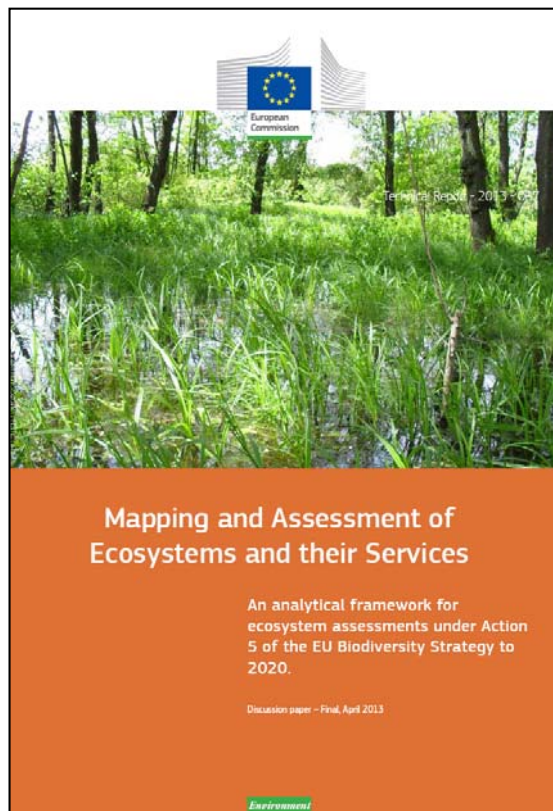
**We need to Map and Assess Ecosystems and their Services**

# Working group **MAES** on **M**apping and **A**ssessment of **E**cosystems and their **S**ervices

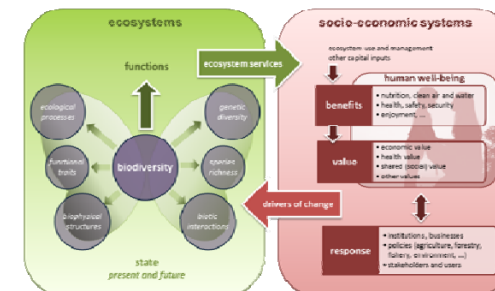


- Oversees implementation of Action 5
- Provides guidance to the EU Member States in technical issues (mapping) but also in mainstreaming ES into sectoral policies
- EU input to Natural Capital Accounting Framework

# Working group **MAES** on **M**apping and **A**ssessment of **E**cosystems and their **S**ervices



- *Conceptual framework for mapping and assessment linking human well being to biodiversity*



- *Typologies for ecosystems and ecosystem services (CICES)*
- *Initiates thematic assessments (agro-ecosystems, forests, freshwater ecosystems, coastal ecosystems, natural capital accounting)*



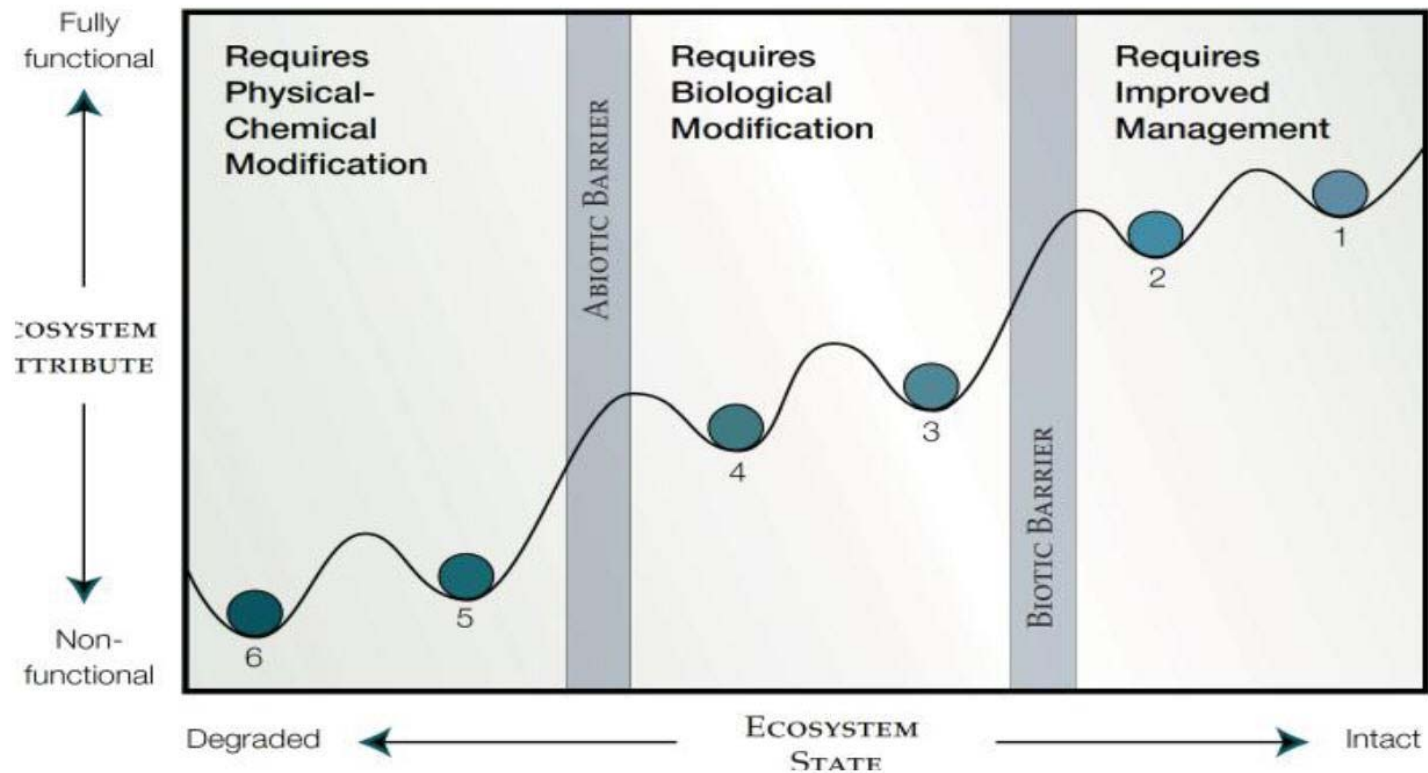
## Action 6a of the Biodiversity Strategy

By 2014, Member States, with the assistance of the Commission, will develop a **strategic framework** to **set priorities for ecosystem restoration** at sub-national, national and EU level.



# ‘Restoration’

- Process of restoration needs to be defined in a better way (see conceptual model Hobbs & Harris for understanding ecosystem states and transitions) → work with **restoration levels**!





ILLUSTRATIVE EXAMPLE FOR A MEMBER STATE WITH HIGH COVERAGE OF NATURAL AREAS					
		Types of areas	Base-line (2010 )	By (and gain) 2020 net	By 2050
LEVEL 1	Satisfactory abiotic conditions. Key species, properties and processes of ecosystems and their functions are restored	a.o. 'wilderness' areas and N2000 habitats and species in FCS	30%	32% (+ 2% from L2)	40% (+ 8% from L2)
LEVEL 2	Satisfactory abiotic conditions, but disrupted ecological processes and functions. Declining diversity and key species.	a.o. N2000 habitats and species not in FCS, ...	15%	28% (+ 15% from L3; - 2% to L1)	35% (+15% from L3; 8% to L1)
LEVEL 3	Highly modified abiotic conditions, reduced ecological processes and functions, dominated by artificial habitats but retains some native species and stable populations.	a.o. non-protected rural areas, not including intensive agriculture	30%	16% (+ 1% from L4; - 15% to L2)	10% (+ 9% from L4; 15% to L3)
LEVEL 4	Highly modified abiotic conditions, severely reduced ecological processes and functions, dominated by artificial habitats with few and/or declining populations of native species; traces of original ecosystem hardly visible.	'transformed ecosystems' (e.g. Intensive agriculture, build urban areas, roads, airports, quarries, brownfield areas, heavily modified water bodies); heavily degraded 'natural' and 'semi-natural' ecosystems	25%	24%	15%
TOTAL SURFACE			100%		
TOTAL 'RESTORABLE' SURFACE			70%		
TOTAL 'RESTORED' SURFACE (cumulative starting from baseline)				18%	50%



## Action 6b of the EU biodiversity strategy

The Commission will develop a Green Infrastructure Strategy by 2012 to promote the deployment of green infrastructure in the EU in urban and rural areas, including through incentives to encourage up-front investment in green infrastructure projects and the maintenance of ecosystem services, for example through better targeted use of EU funding streams and Public Private Partnerships.



## **Action 7a of the EU biodiversity strategy.**

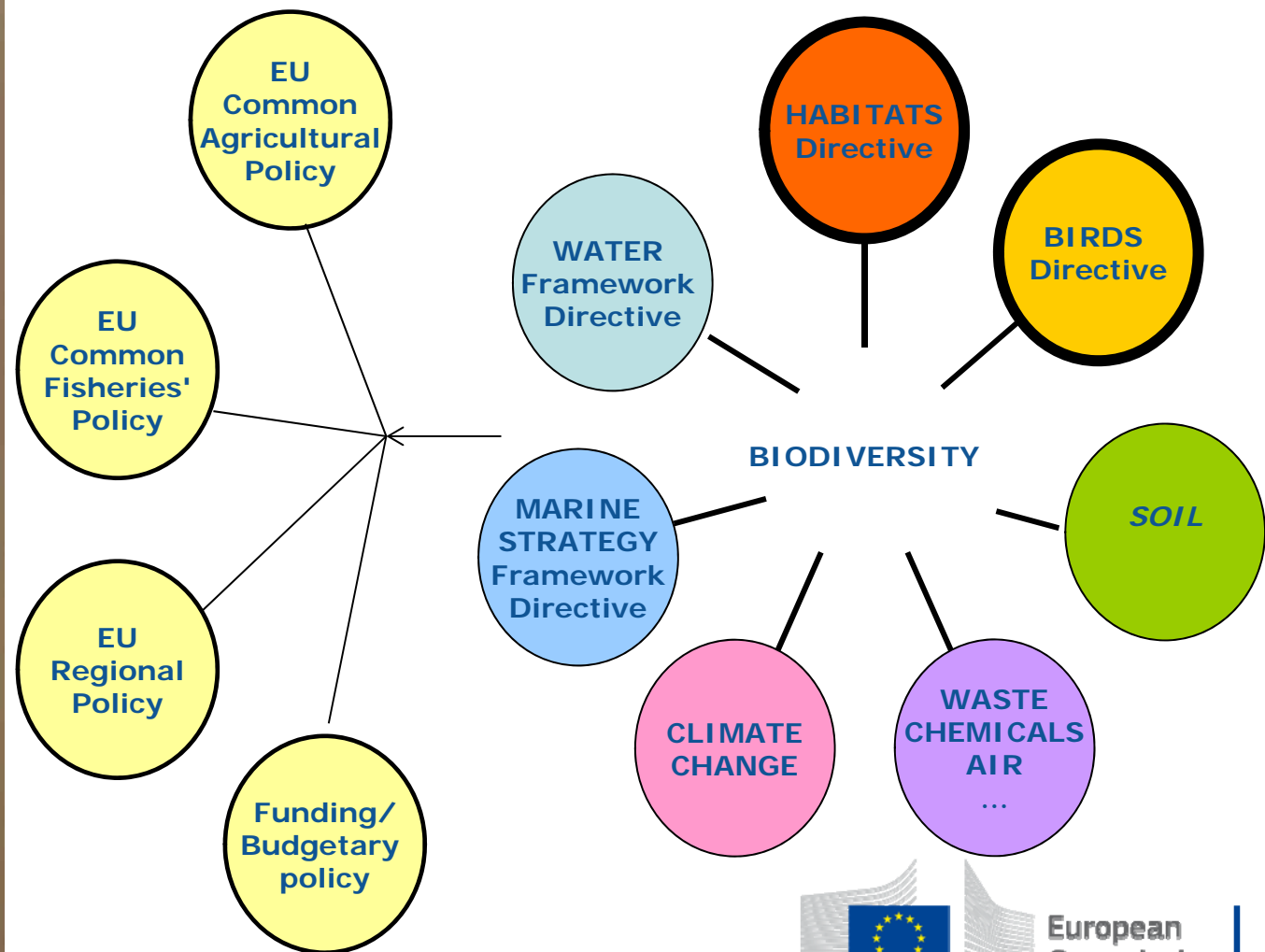
**In collaboration with the Member States, the Commission will develop a methodology for assessing the impact of EU funded projects, plans and programmes on biodiversity.**



## Action 7b of the EU biodiversity strategy

The Commission will carry out further work with a view to proposing by 2015 an initiative to ensure there is no net loss of ecosystems and their services (e.g. through compensation or offsetting schemes)

# policy linkages to the EU biodiversity strategy.







## Targets in the EU biodiversity strategy

- **Headline Target-Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020.**
- **Target 1- By 2020-100% more habitat assessments and 50% more species assessments show improved conservation status.**
- **Target 2- By 2020-ecosystems and ecosystem services are maintained and enhanced----restoring 15% of degraded ecosystems.**



## Knowledge needs in support of the biodiversity strategy-strategic.

- To help identify priorities for restoration
- To inform decisions on the deployment of Green Infrastructure.
- To support the development and implementation of No Net Loss.
- To inform land use planning at EU and regional scale linked to the delivery of CAP, Cohesion policy, transport etc.
- EIB investment priorities.



## Knowledge needs in support of the biodiversity strategy-project level.

- Restoration, GI deployment, offsetting (metrics).
- CAP, Cohesion, Climate adaptation, transport etc implementation, monitoring ex-ante conditionalities(court of auditors)



# Data and information sources.

- Legislative reporting streams-Birds and Habitats Directives, WFD, MSFD.
- Monitoring and Reporting linked to funding-CAP, Cohesion Policy, CFP.
- EEA (SOER, SEBI, Biodiversity baseline + many others), JRC, ESTAT (e.g. agri environment indicators), ESA, IUCN etc.
- RTD -Horizon 2020
- MTR process
- International, national and local sources.



# Thank you for your attention



[patrick.murphy@ec.europa.eu](mailto:patrick.murphy@ec.europa.eu)