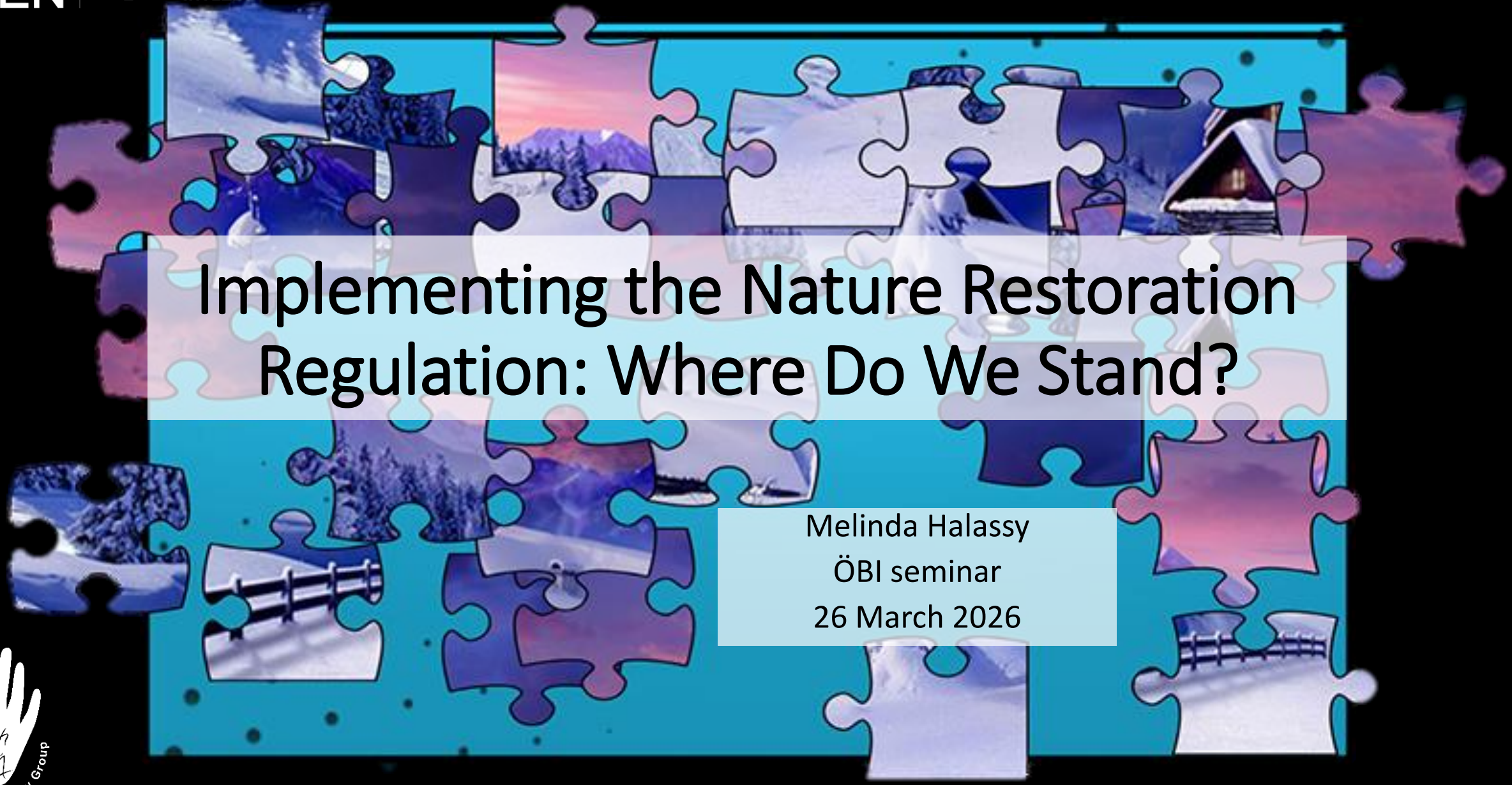
HUN REN ÖKOLÓGIAI ÉS BOTANIKAI INTÉZET



Implementing the Nature Restoration Regulation: Where Do We Stand?

Melinda Halassy

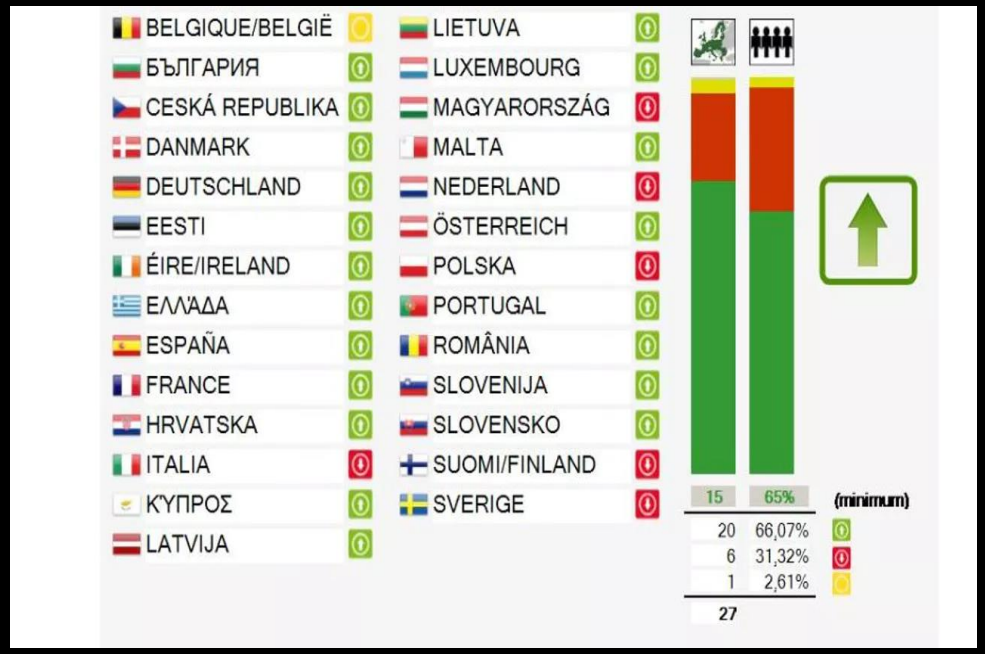
ÖBI seminar

26 March 2026

Restoration Ecology Group

Basics

EU 2024/1991 Regulation on Nature Restoration



The EU Environment Council adopted the regulation on June 17, 2024, and it entered into force on August 18, 2024

Overall objective

Specific restoration goals

Enforcement Framework

National Restoration Plans

Monitoring and Reporting

Overall objective

Restoration measures should be in place by 2030 across at least 20% of all EU terrestrial (and marine) areas, and by 2050 across all areas requiring restoration.

- Member States must introduce measures that result in the restoration of habitats and species, as well as the **functioning, connectivity, and resilience of ecosystems**.
- They must develop national nature restoration plans in close cooperation with representatives of the **scientific community, relevant stakeholders, and the public.**
- They must include clear **quantitative targets** regarding the location, area, and type of ecosystems to be restored, indicator values as well as the timeline, monitoring, and financial resources to be used.
- The European Commission will evaluate the plans and progress according to **uniform criteria**.

Specific restoration goals

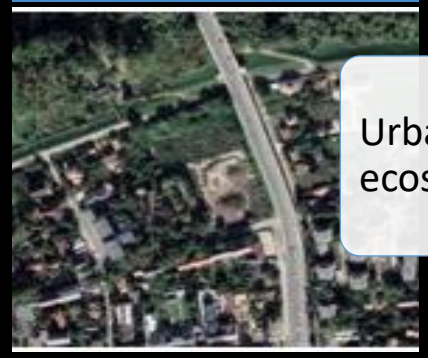
4. article

Terrestrial ecosystems

5. article

Marine ecosystems

8. article



Urban ecosystems

9. article

River connectivity

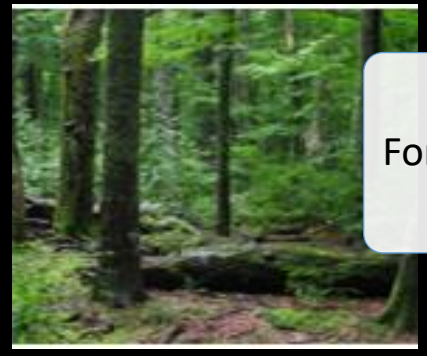
10. article

Pollinators

11. article

Agri-ecosystems

12. article

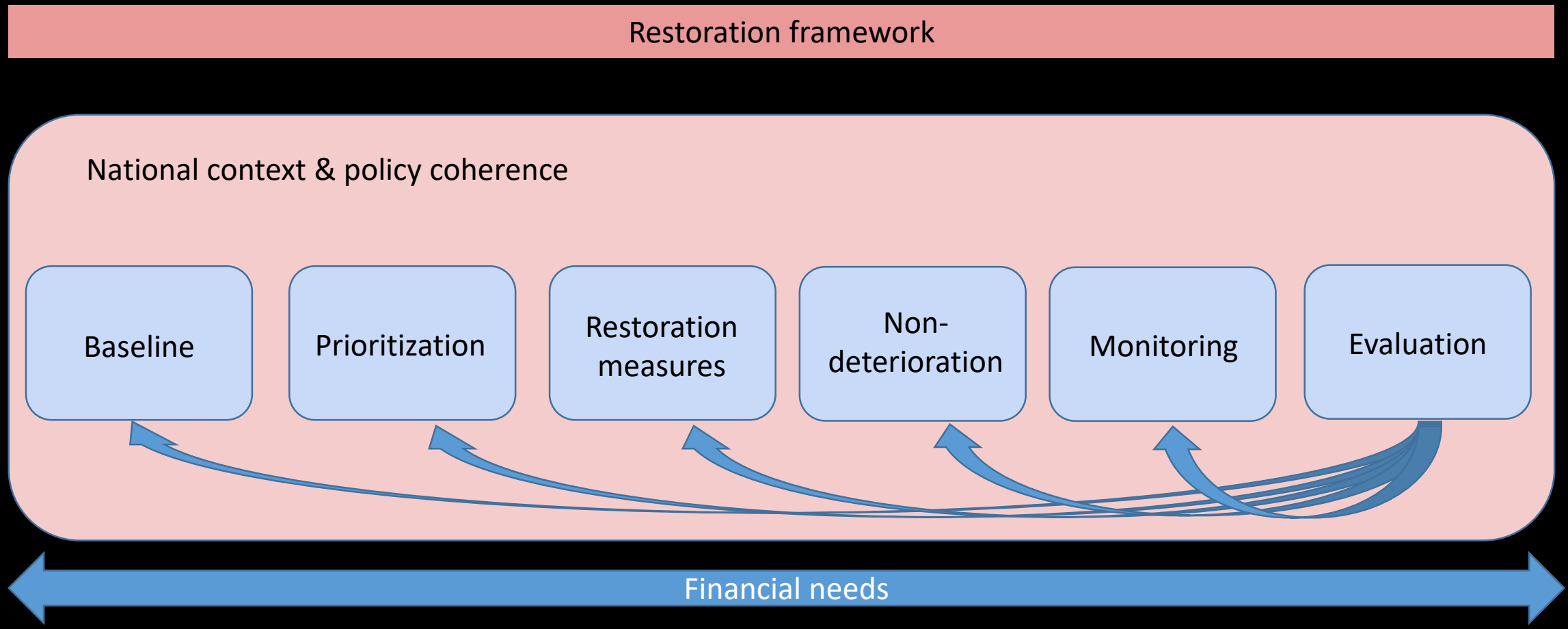


Forests

13. article

3 billion tree

National Nature Restoration Plans
1 Sept 2026



Timeline of NRR implementation, and National Restoration Plans

- 18 August 2024 - Entry into force of NRR

- May 2025 : implementing Regulation establishing a **uniform format** for the national restoration plans (NRPs)
- Summer / Autumn 2025 : explanatory notes accompanying the uniform format

→ **To use to fill NRPs according to NRR article 15.3 & 15.7**

- 01 September 2026 – **Draft national restoration plans** submitted by the Member States to the Commission
- Max 6 months later : observations of the Commission
- Max 6 more months later : **Final national restoration plans** submitted by the Member States to the Commission

→ **NRR article 16**

→ **NRR article 17.4 & 17.6**

- 30 June 2028 : first **reporting** of progress in the implementation of NRPs, then every 3 years afterwards

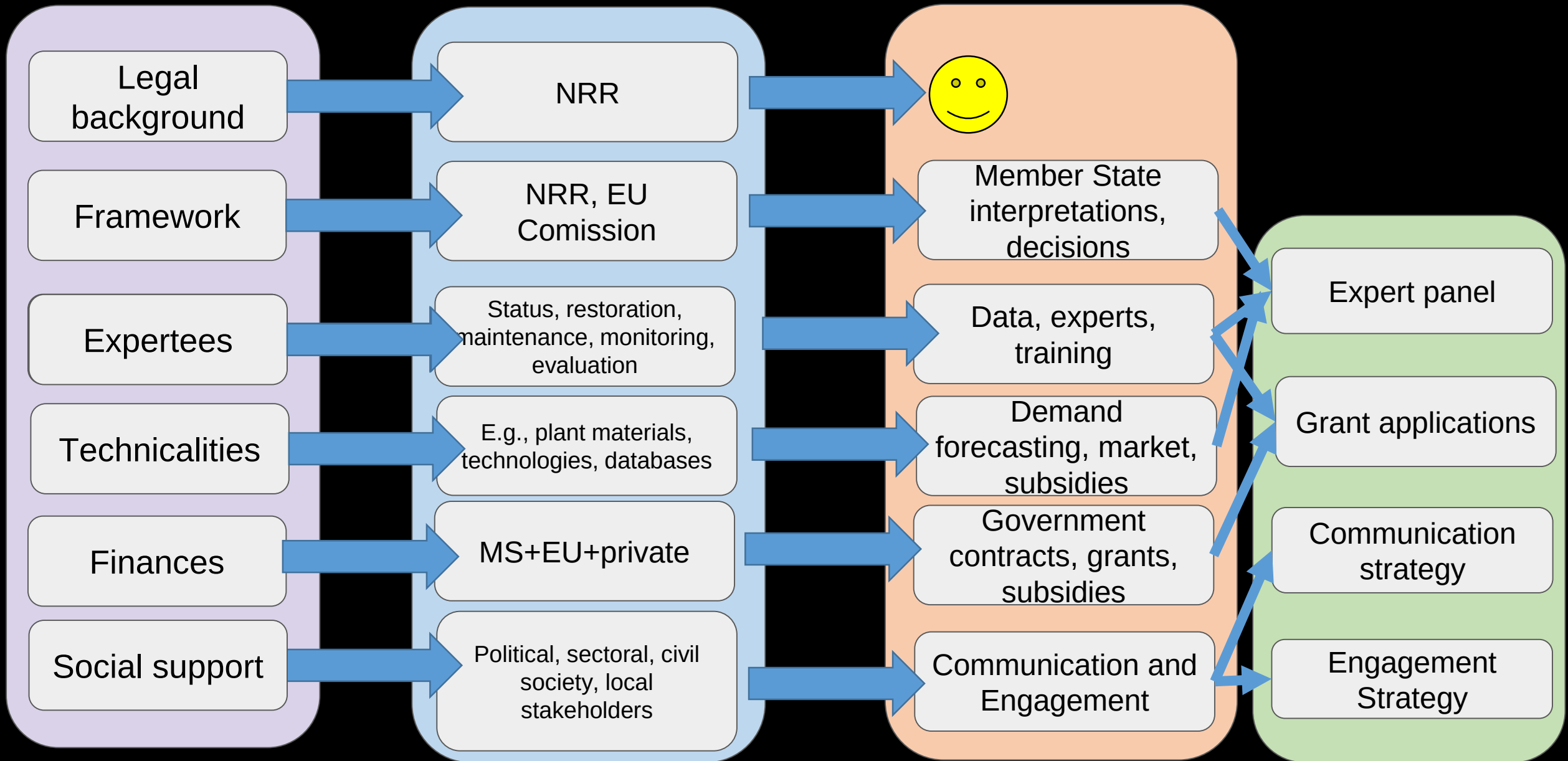
→ **NRR article 21**

- 30 June 2032, 30 June 2042 and at least once every 10 years thereafter : **review** and if necessary, **revision of NRPs**

→ **NRR article 19**

European Commission

Preconditions, resources, needs, and opportunities



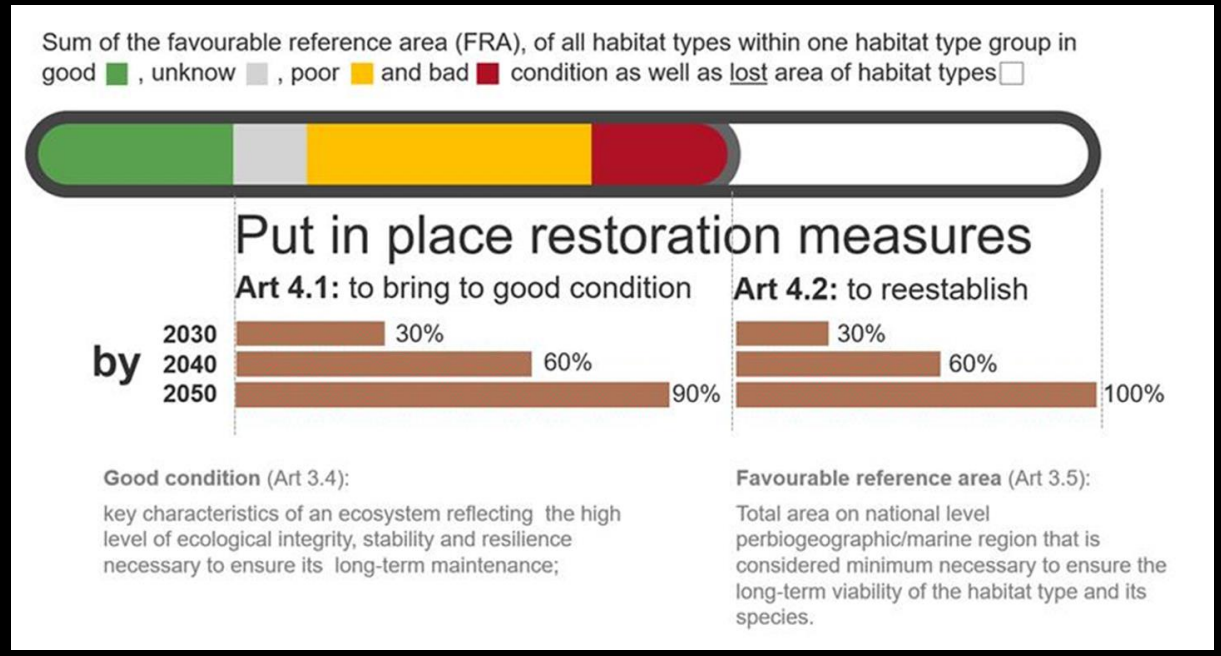
Specific goals

Restoration of terrestrial, coastal and freshwater ecosystems (art. 4.)

Restoration of terrestrial, coastal and freshwater ecosystems (art. 4.) - legal

Restoration habitat types not in good condition

Re-establishment of habitat types to reach the favourable reference area



Increasing trend towards sufficient quality and quantity of habitats for species of community interest

Restoration of terrestrial, coastal and freshwater ecosystems (art. 4.) - framework

i. Map showing the total area and current distribution of the habitat;

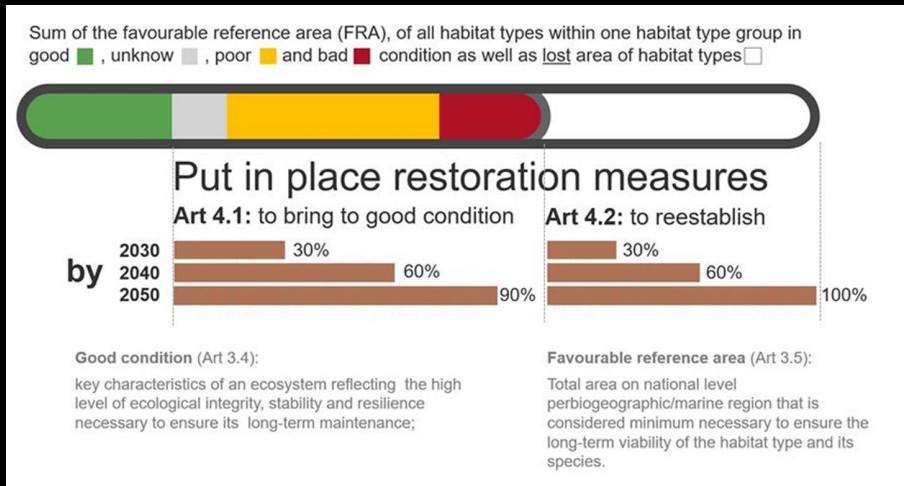
ii. Area of the habitat in poor condition;

iii. Favorable reference area (taking into account historical distribution data and projected changes in environmental conditions due to climate change);

iv. Quantification of habitat areas with "unknown status“

v. Status and requirements of Natura 2000 species

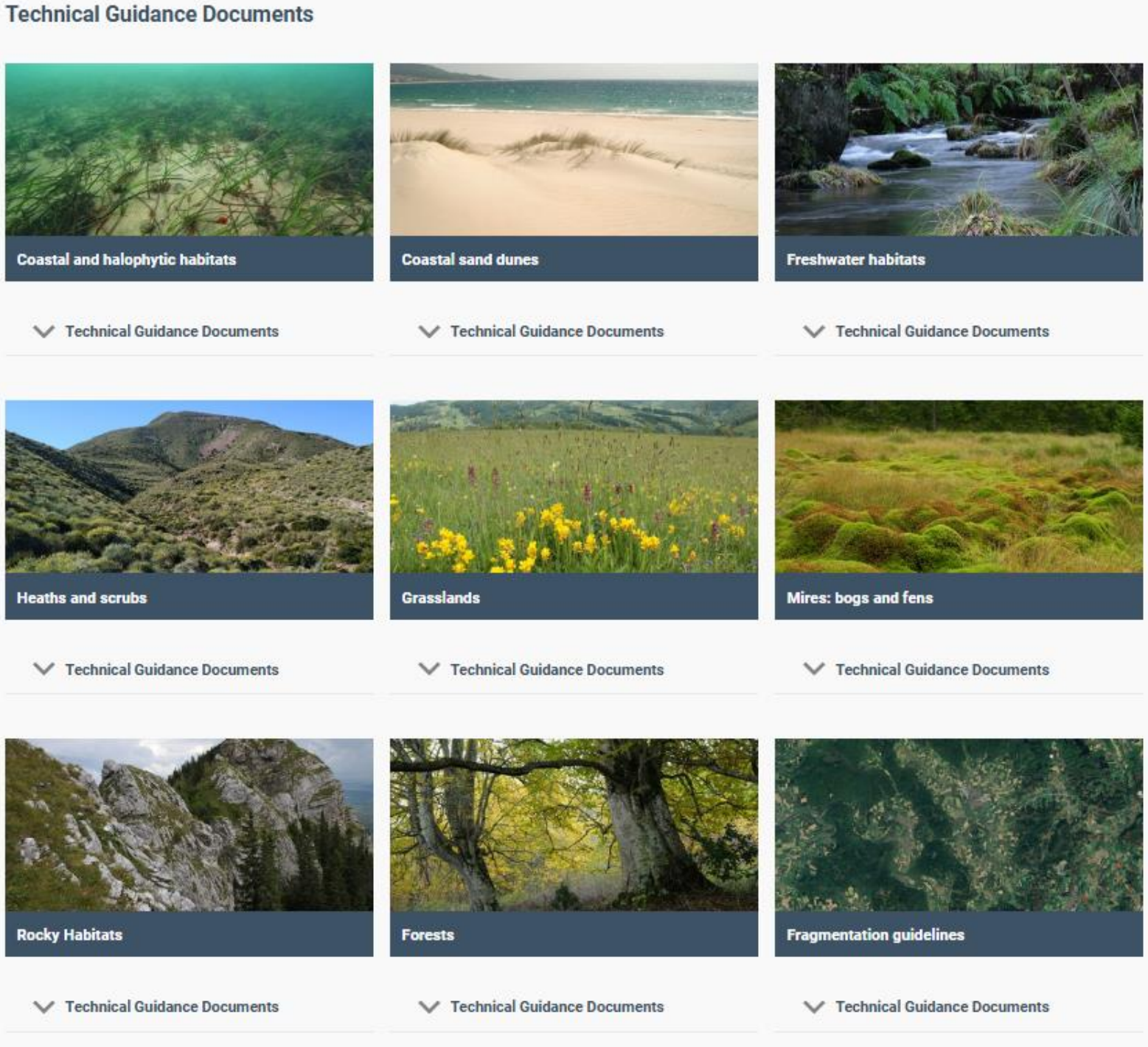
vi. Assessing and monitoring condition

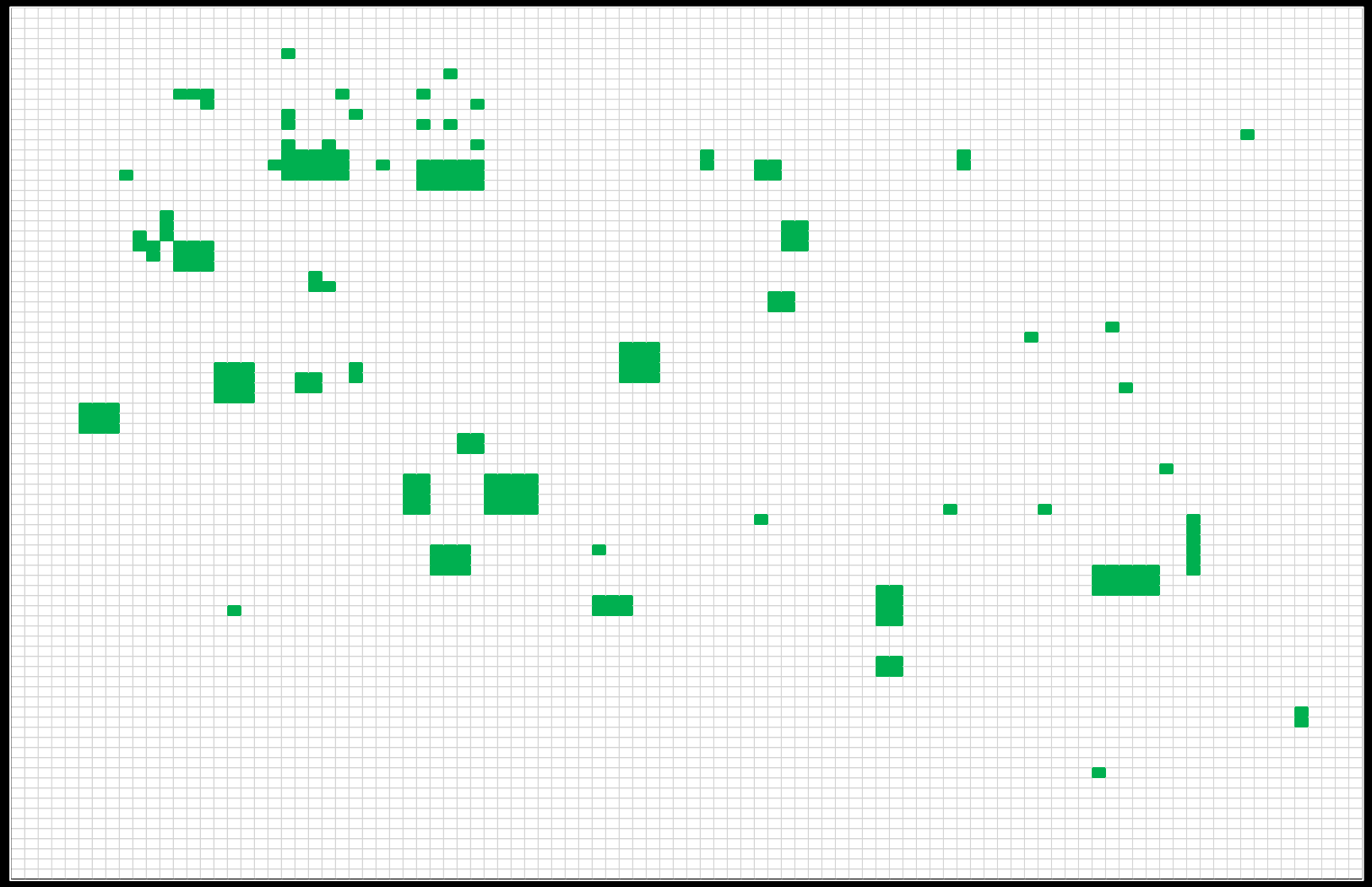


Art. 4. - framework

- Typology of ecosystems
- Typology of measures
- Explanatory material on HD art. 17, incl. FRA
- Assessing and monitoring condition

Nature Restoration Regulation Reference Portal

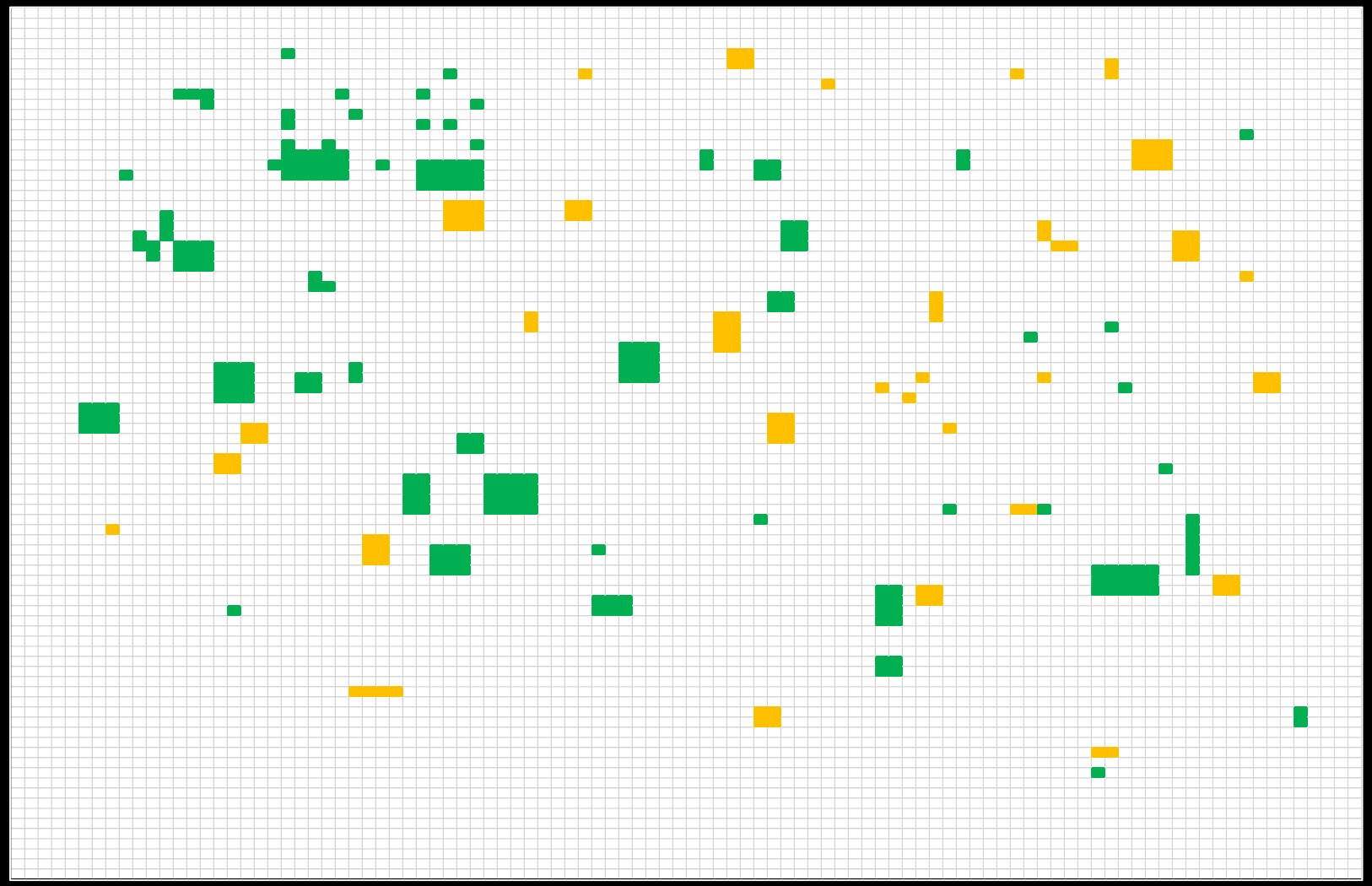




X Annex I habitat

Within Natura 2000

Kris Decleer

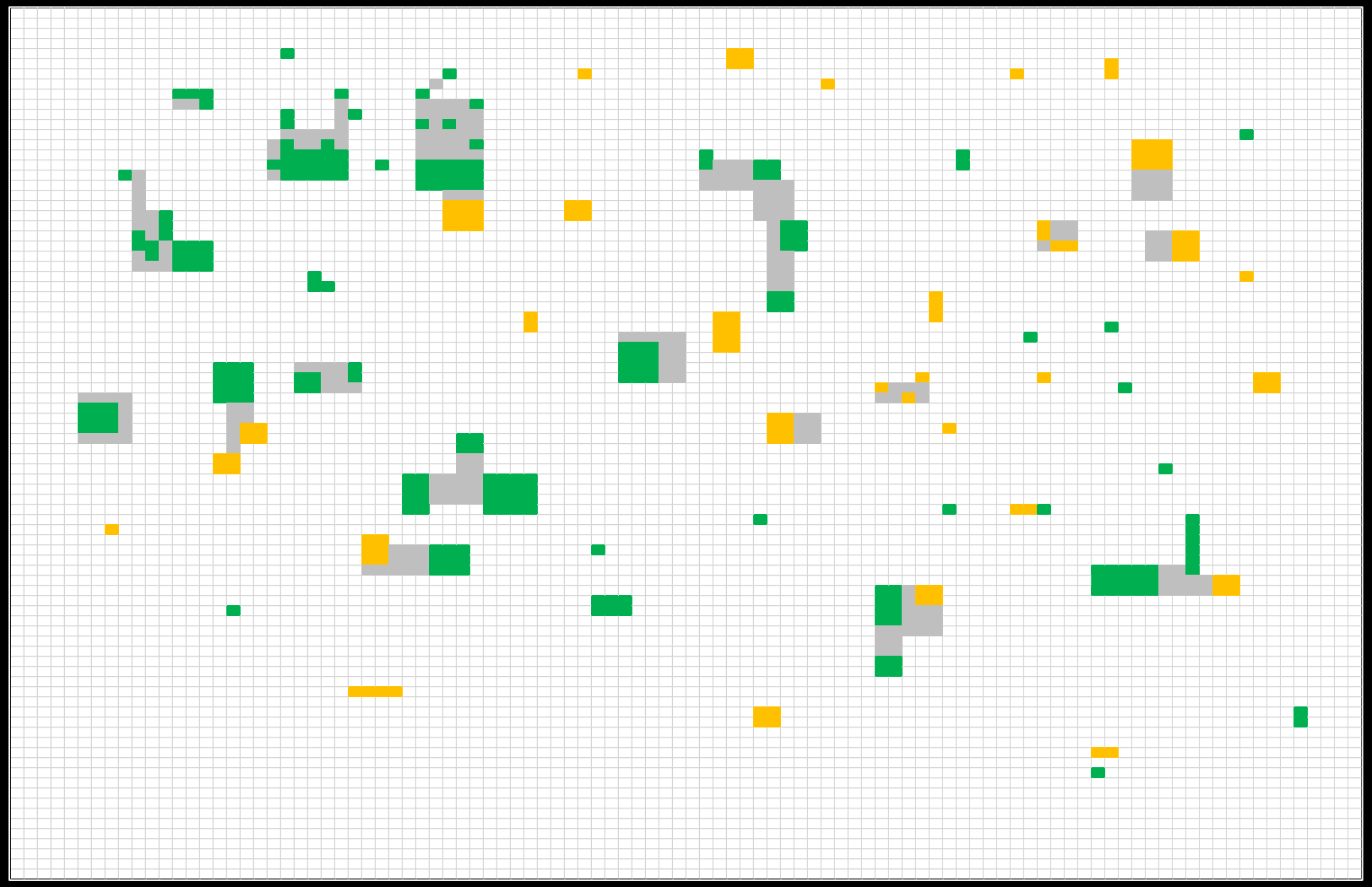


X Annex I habitat

Within Natura 2000

Outside Natura 2000

Kris Decleer



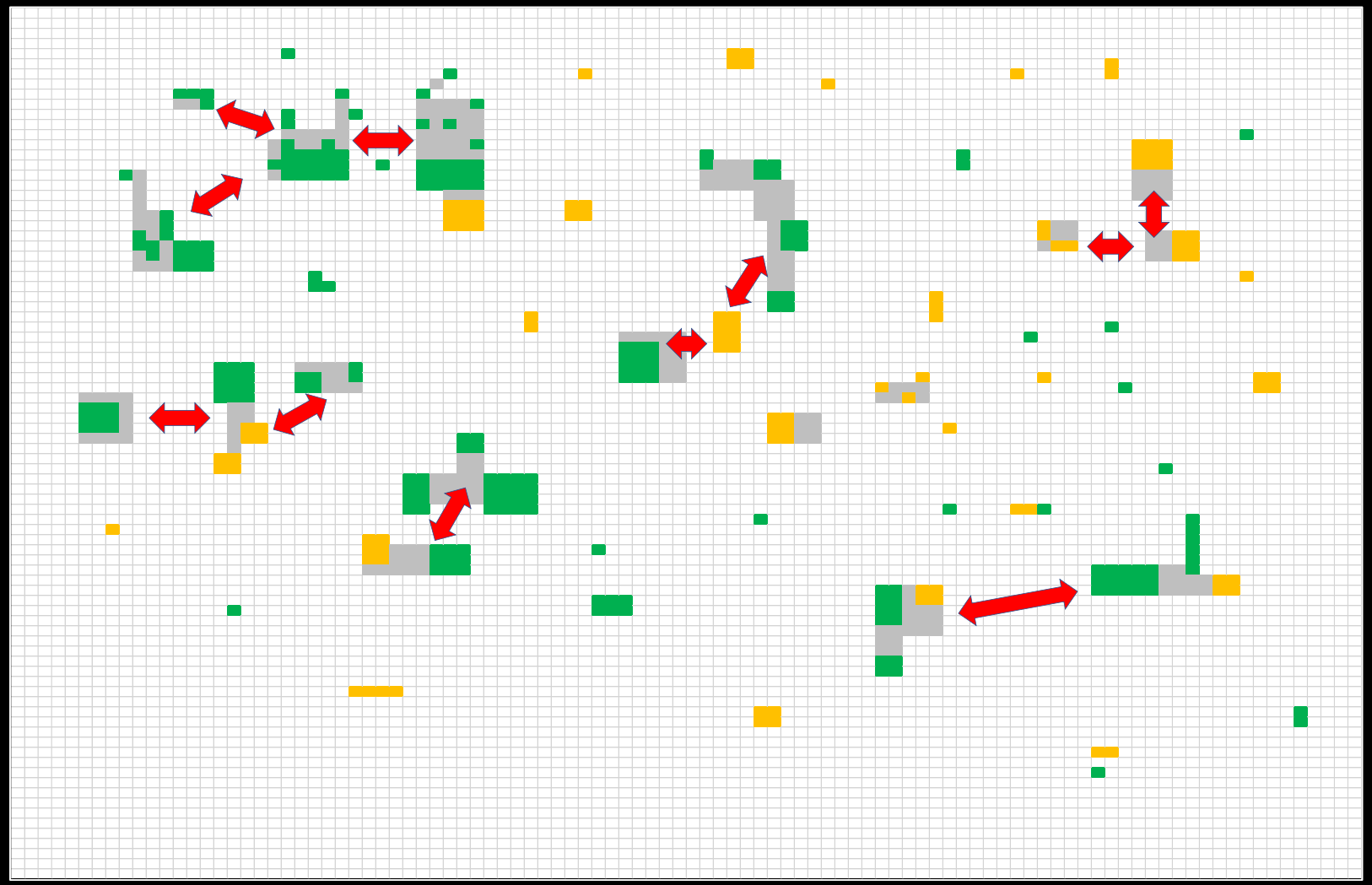
X Ökoszisztéma

Natura 2000

Natura 2000-en kívüli állományok

Destroyed (FRA)

Kris Decleer



X Ökoszisztéma

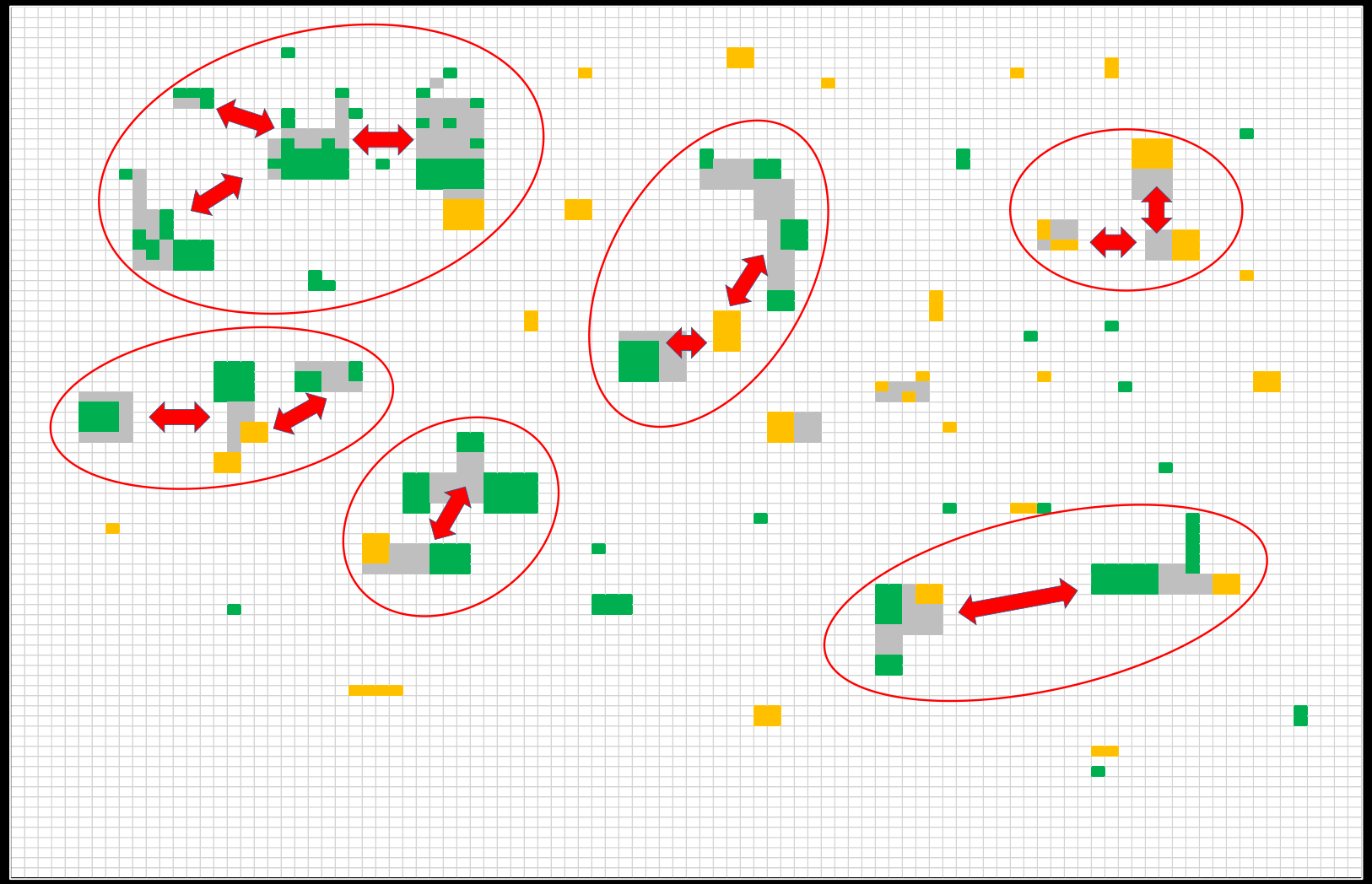
Natura 2000

Natura 2000-en kívüli állományok

Destoryed (FRA)

Ecological corridors

Kris Decleer



X Ökoszisztéma

Natura 2000

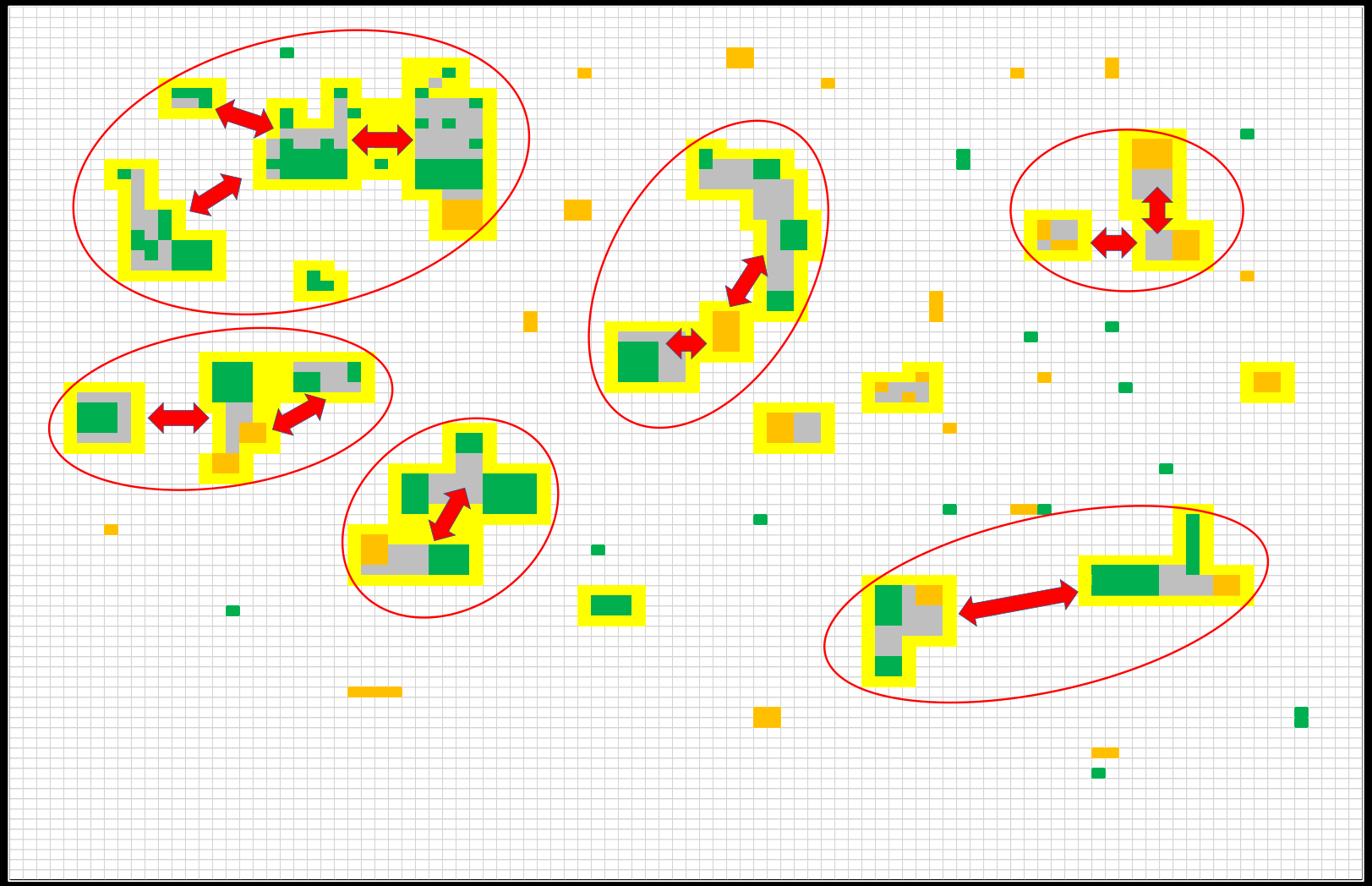
Natura 2000-en kívüli állományok

Destroyed (FRA)

Ecological corridors

robust, resilient ecosystem cluster "in good condition" (landscape approach)

Kris Decleer



X Ökoszisztéma

Natura 2000

Natura 2000-en kívüli állományok

heavily degraded / lost (FRA)

need for ecological corridors

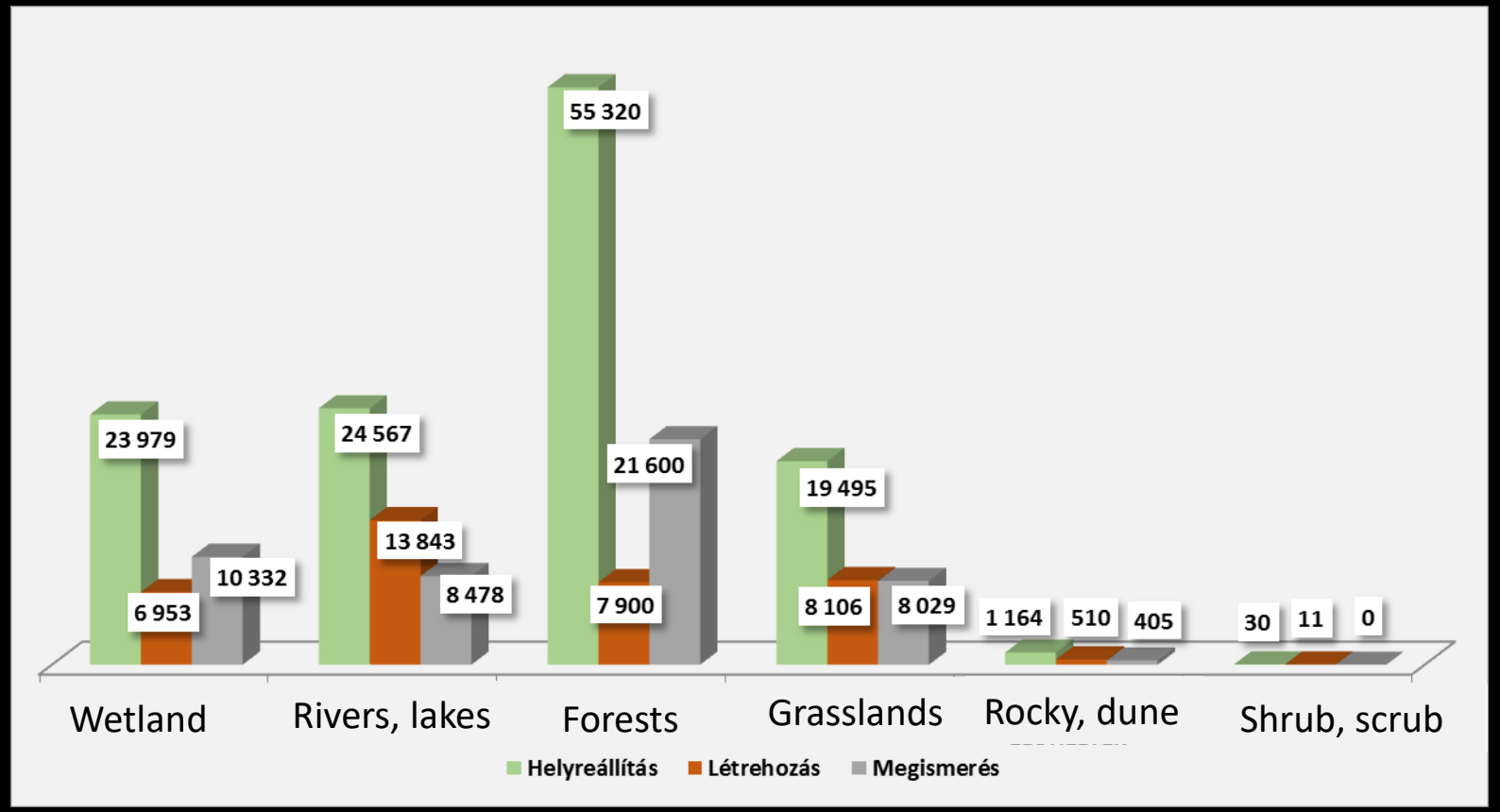
robusztus, ellenálló ökoszisztéma-klaszter "jó állapotban(táji megközelítés)

Buffering against negative impacts (eutrophication, desiccation, the effects of climate change, fragmentation...).

Kris Decleer

Restoration of terrestrial, coastal and freshwater ecosystems (art. 4.) - Hungary

- Baseline: Article 17 Habitat Directive – habitat condition and FRA



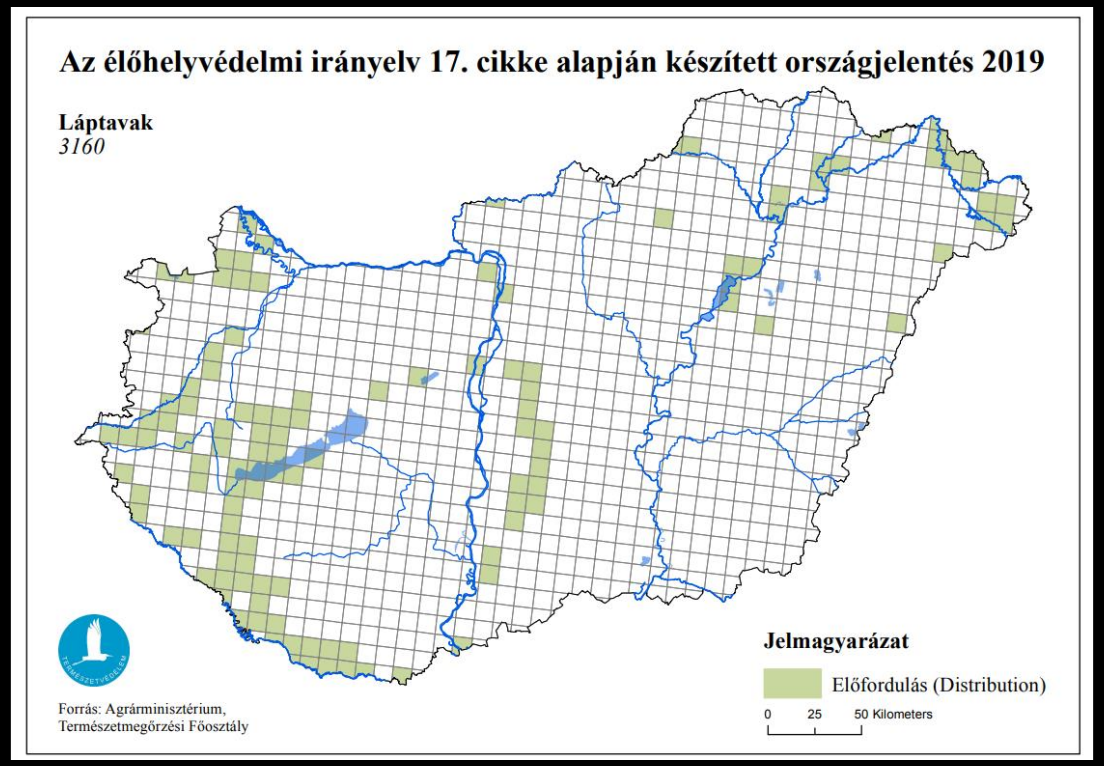
Estimated area of the land (ha)

- Poor condition
in need for habitat restoration

- FRA
in need for the (re)creation of habitat areas

- Unknown condition
in need for the assessment of habitat conditions

Restoration of terrestrial, coastal and freshwater ecosystems (art. 4.) - Hungary

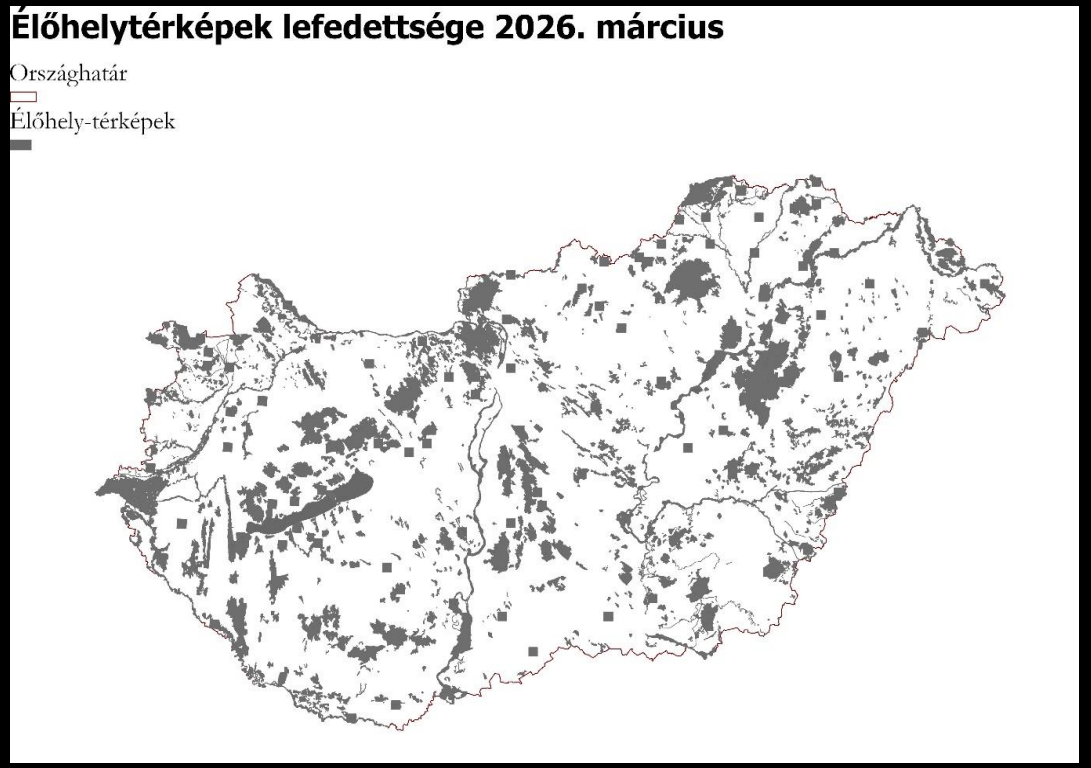


Natural dystrophic lakes and ponds

- HD Art. 17 Report 2019
- 10 x 10 km grid
- Expert-based
- Not corresponding to restoration needs

Restoration of terrestrial, coastal and freshwater ecosystems (art. 4.) - Hungary

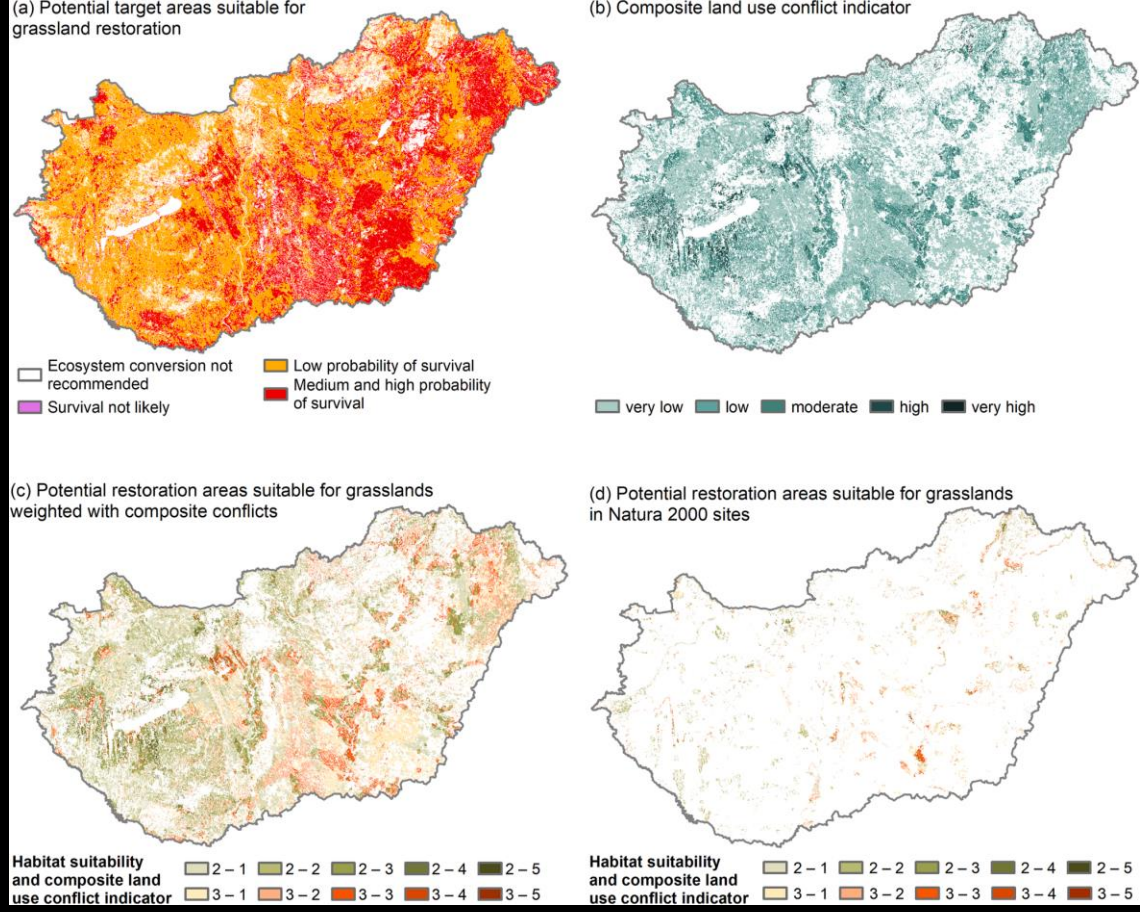
- Focus on Natura 2000 areas by 2030
- Correspondence between Á-NÉR and Natura 2000
- Condition based on TDO for Natura 2000 areas
- Forestry Data outside Natura 2000

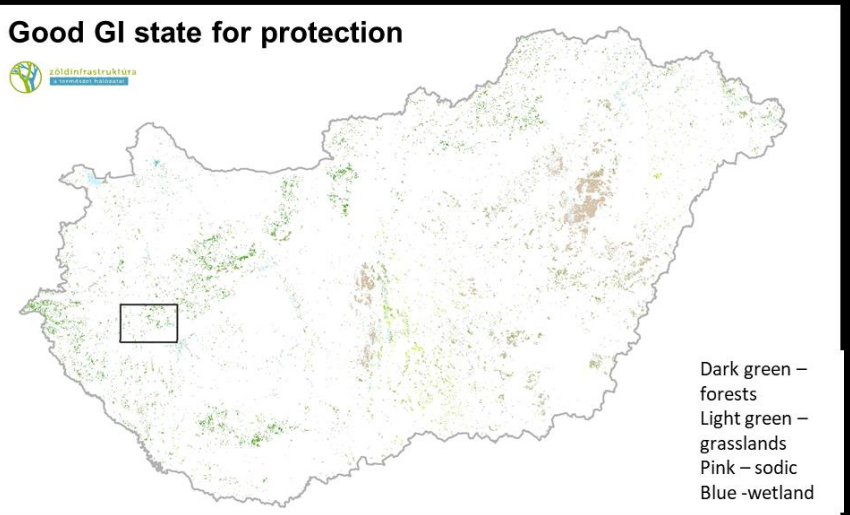


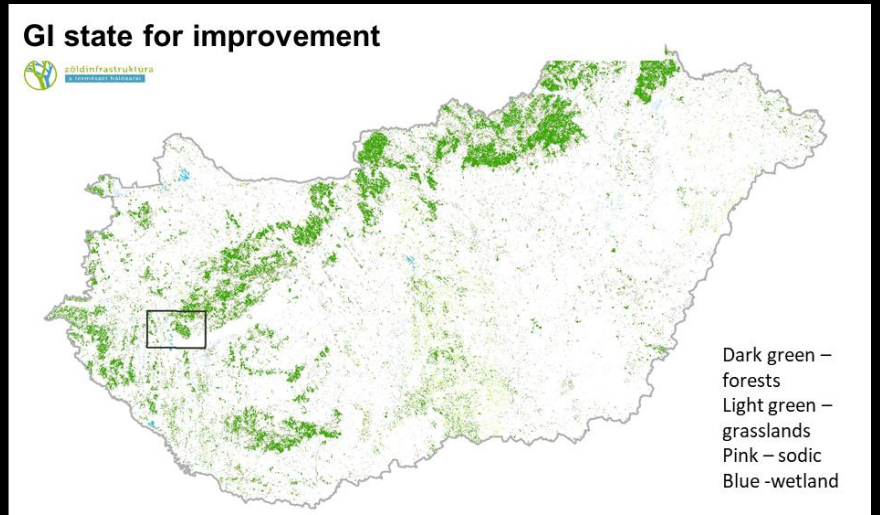
Availability of detailed habitat maps (Natura 2000) (E. Tanács)

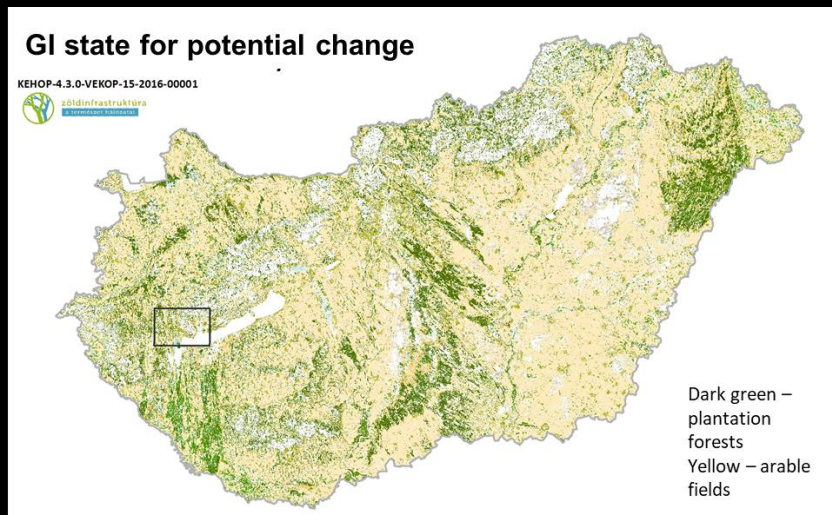
Art. 4. - Hungary

- Suggested top down approach Green Infrastructure
  - Zones for protection, improvement and re-establishment
  - Potential vegetation as targets
  - Environmental conflicts and feasibility









Specific goals

Restoration of urban ecosystems (art. 8.)

Restoration of urban ecosystems (art. 8.) - legal

- By 2030 no net loss in the total national area of urban green space and of urban tree canopy
- After 2030 increasing trend in the total national area of urban green space and urban tree canopy until a satisfactory level
  - integration of urban green space into buildings and infrastructure,
  - measured every six years from 1 January 2031

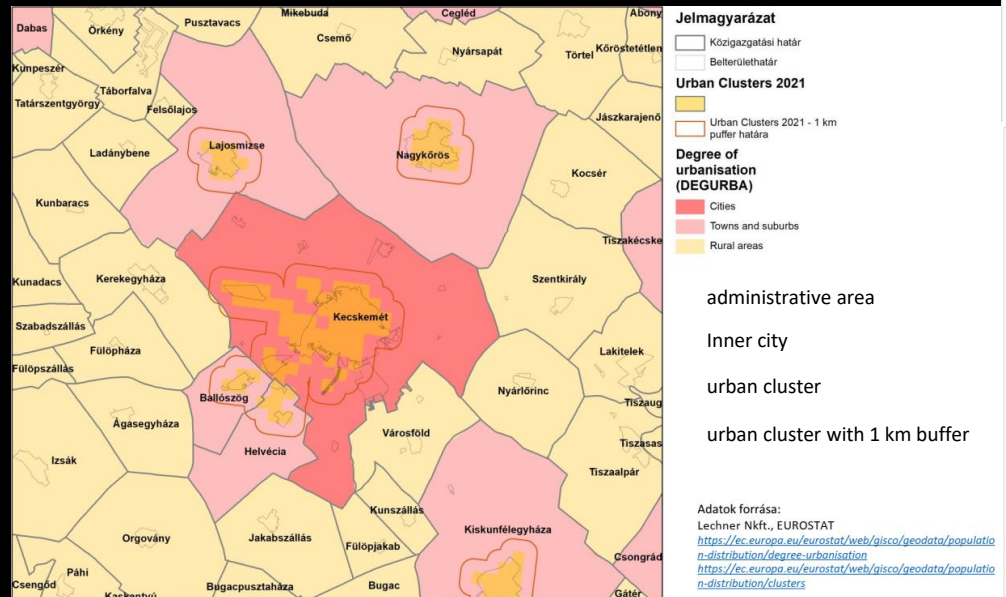
Restoration of urban ecosystems (art. 8.) - framework

- Member States can choose how they will define the urban ecosystem area on their territory and determine satisfactory levels
- Urban green space (national level) and tree canopy cover (urban level) with date provided by the Copernicus Land Monitoring Service
- Areas where the proportion of urban green space exceeds 45% and the proportion of urban canopy cover exceeds 10% may be excluded
- The lack of explicit biodiversity considerations
- The risk of unequal distribution

Restoration of urban ecosystems (art. 8.) - Hungary

- Minister of Construction and Transportation
- 355 of Hungary's 3,155 municipalities (DERUGBA methodology)
- Urban ecosystem area: administrative units
- Methodology for canopy cover?
- Experts:

ÖSZZI project?



administrative area

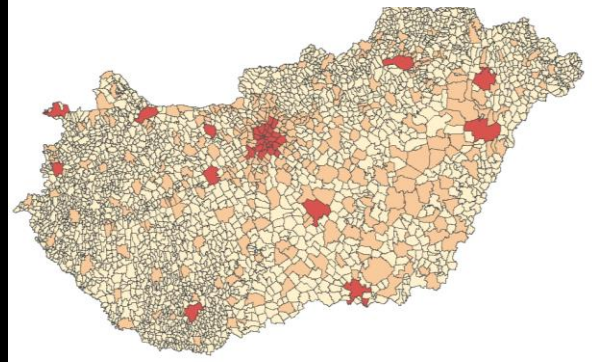
Inner city

urban cluster

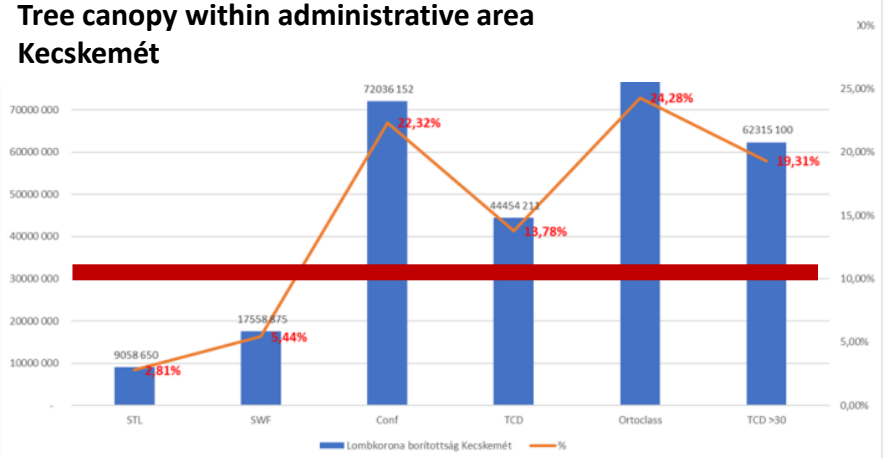
urban cluster with 1 km buffer

Adatok forrása:
Lechner Nkft., EUROSTAT
https://ec.europa.eu/eurostat/web/gisco/geodata/population-distribution/degree-urbanisation
https://ec.europa.eu/eurostat/web/gisco/geodata/population-distribution/clusters

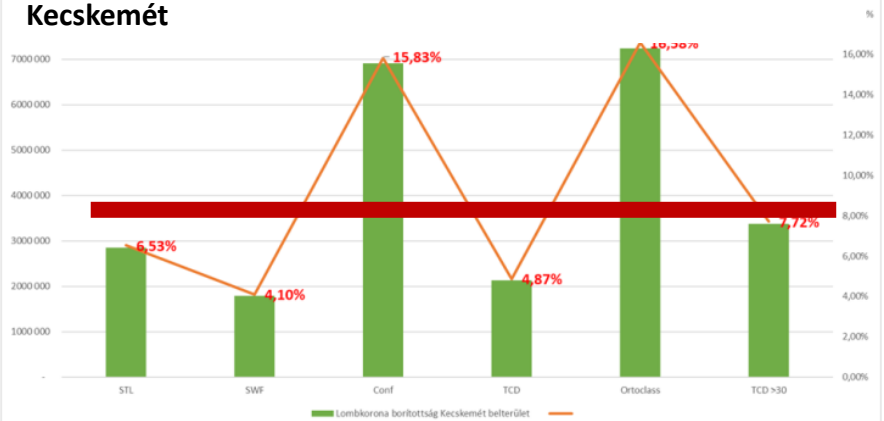
Classification of Hungarian settlements by degree of urbanization



Tree canopy within administrative area Kecskemét



Tree canopy within the inner city Kecskemét

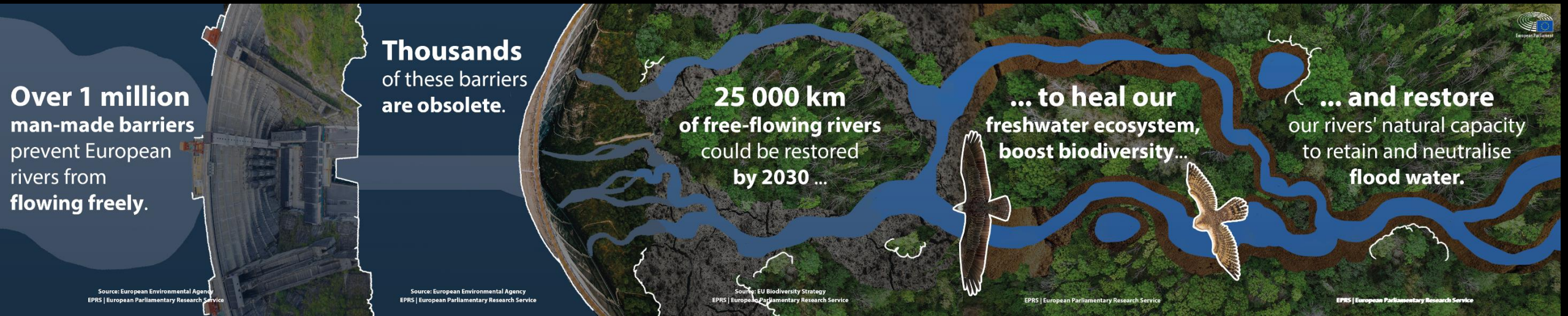


Specific goals

Restoration of the natural connectivity of rivers and natural functions of the related floodplains (art. 9.)

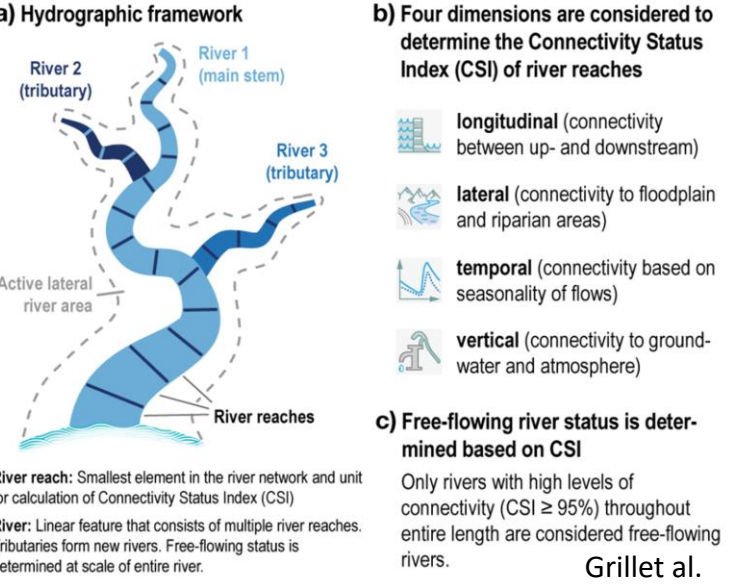
Restoration of rivers (art. 9.) - legal

- Inventory of artificial barriers to the connectivity of surface waters
- Identify the barriers that need to be removed
- Remove the artificial barriers to the connectivity
- Improve the natural functions of the related floodplains
- Maintain connectivity in the long term

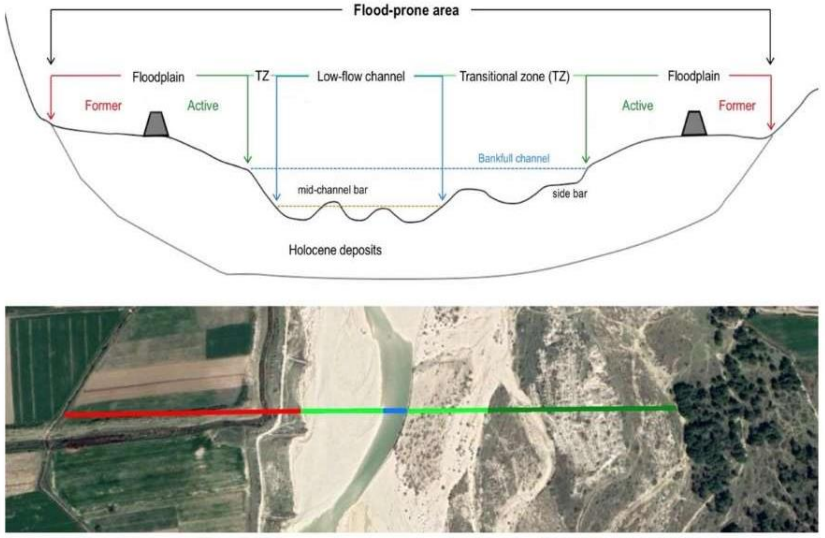


Restoration of rivers (art. 9.) - framework

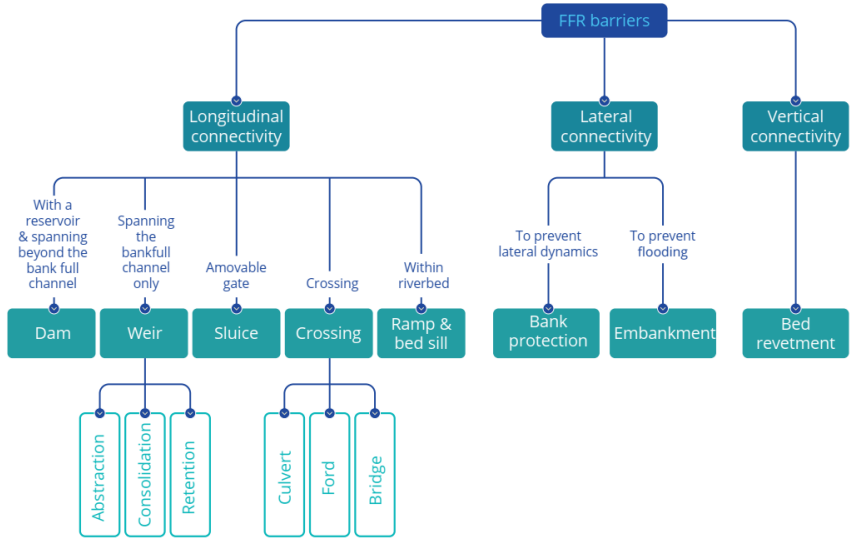
- [Criteria for identifying free-flowing river stretches]
- [Guidance on Barrier Removal for River Restoration]
- Four dimensional river connectivity
- Water Framework Directive - water management plans



Grillet al.



Source: Bottom image: Google Maps (2020)



Restoration of rivers (art. 9.) -Hungary

- Ministry of Energy and Ministry of Agriculture
- EU guidance followed
- Shared barrier GIS database with NC
- Water retention needs respected

- Bottom-up approach (experts):

NPs indicate removal needs

Water management agencies possibility

- Top down approach:

National priorities for NC and Energy and transport

- Experts: WWF, HUN-REN BLRI and CER

Specific goals

Restoration of pollinator populations (art. 10.)

Restoration of pollinator populations (art. 10.) - legal

- Improve pollinator diversity and reverse the decline of pollinator populations by 2030
- Achieve increasing trends to satisfactory levels by 2050
- Science-based method for monitoring pollinator diversity and pollinator populations
- Annual monitoring

Restoration of pollinator populations (art. 10.) - framework

Science-based method for monitoring (2025/2188)

- Sites (70):
  - 2 km-by-2 km square centred on a point of the LUCAS master grid
  - stratified random sampling (biogeographical, forest, agriculture, other; urban excluded; additional features)
- Monitoring:
  - Annual (monthly)
  - 1 km transect walks
  - Light traps for night-active moths
  - Targeted field visits for rare pollinators
  - Abundance: Generalised Abundance Index, GAI
  - Species richness: Shannon–Weaver-diversity index

HU

- Responsible Ministry for Agriculture
- Experts: Imre Demeter (HUN-REN CER)

SPRING

Specific goals

Restoration of agricultural ecosystems (art. 11.)

Restoration of agricultural ecosystems (art. 11.) - legal

- Restoration measures necessary to enhance biodiversity
- Increase until satisfactory levels:
  - grassland butterfly index; stock of organic carbon in cropland mineral soils; share of agricultural land with high-diversity landscape features (2/3)
  - common farmland bird index (obligatory)
- Restoration and partial rewetting of drained peatlands used for agricultural purposes

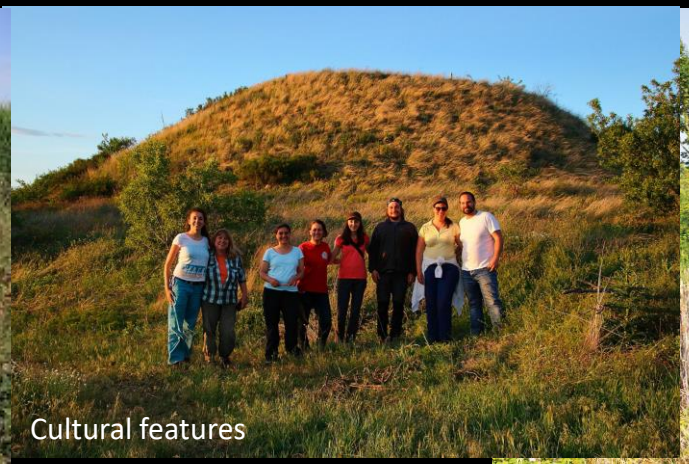
Restoration of agricultural ecosystems (art. 11.) - framework

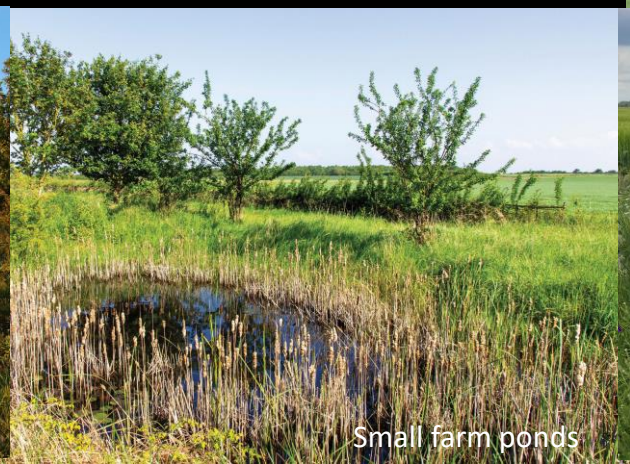
- Guidance on a framework for developing methodologies to monitor high-diversity landscape features
  - (a) they cannot be under productive agricultural use (including grazing or fodder production), unless such use is necessary for the preservation of biodiversity; and
  - (b) they should not receive fertilizer or pesticide treatment, except for low input treatment with solid manure


Single or group of tress


Silvopastoral systems


Field margins


Cultural features

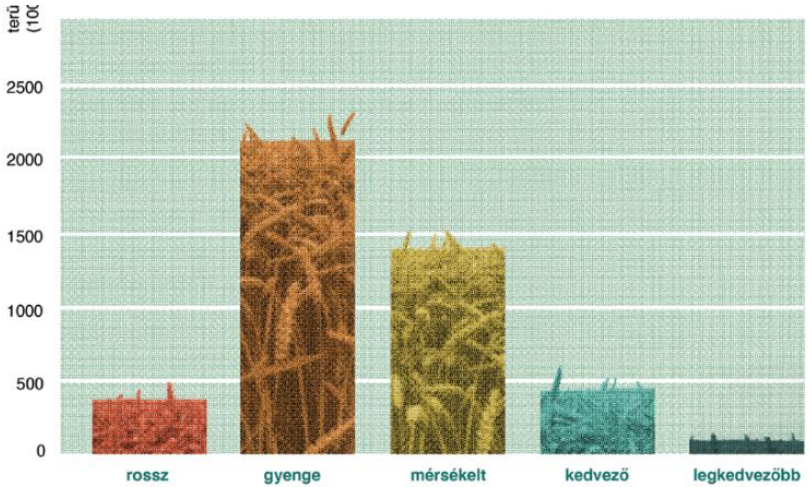

Small farm ponds


Flower strips

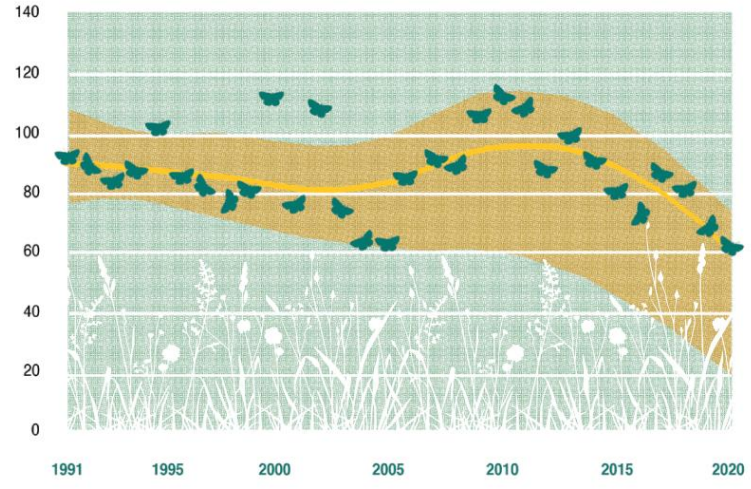
Restoration of agricultural ecosystems (art. 11.) - Hungary

- Ministry of Agriculture NC and Agriculture
- CAP responsibles
- Despite NC interest problem with monitoring butterflies ***ButterflyCount app***
- Experts: MME birds monitoring

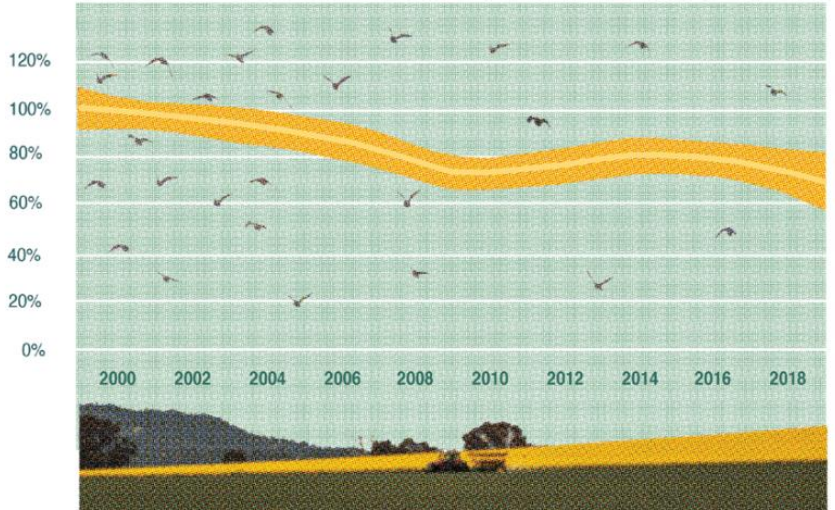
Ecological status of agricultural fields (Source: NÖSZTÉP)



Over the past 30 years, the number of grassland butterflies in the European Union has declined by 40% (Source: European Environment Agency)



The agricultural bird index is showing a declining trend in Hungary (Source: MME)



Specific goals

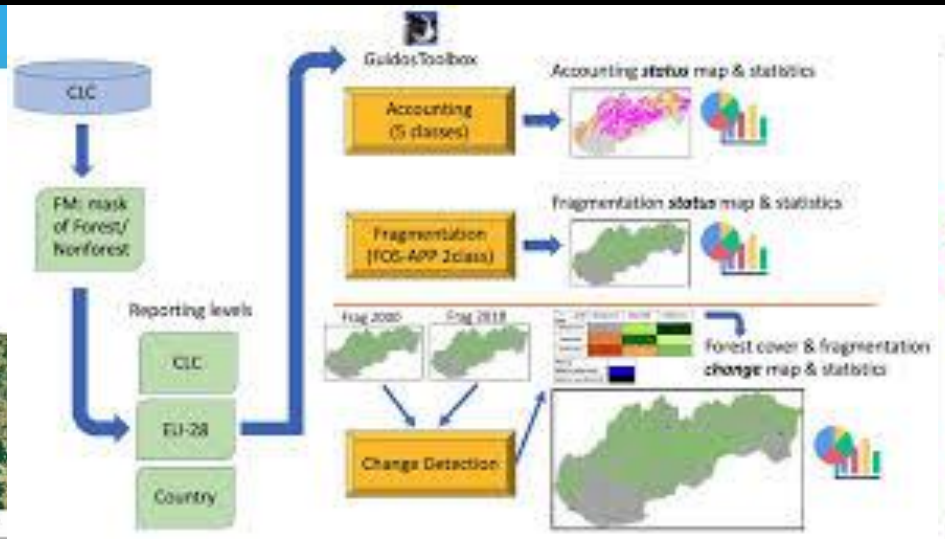
Restoration of forest ecosystems (art. 12.)

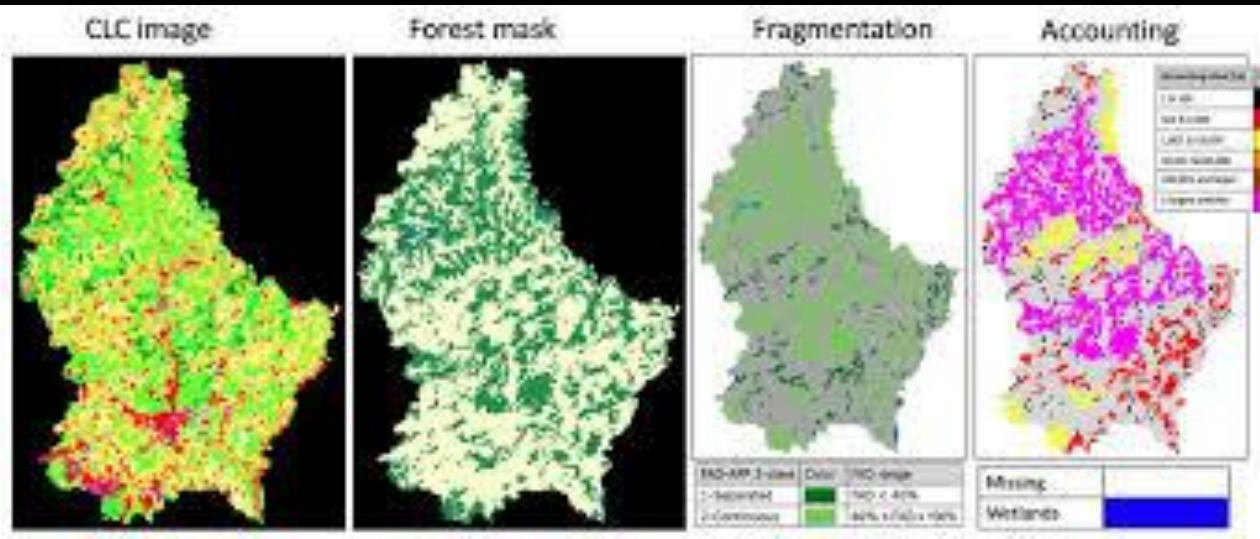
Restoration of forest ecosystems (art. 12.) - legal

- Restoration measures necessary to enhance biodiversity
- Increase until satisfactory levels:
  - common forest bird index (obligatory)
  - standing deadwood; lying deadwood; proportion of forests with uneven-aged stands; forest connectivity; organic carbon stock; proportion of forests dominated by native species; tree species diversity (6/7)

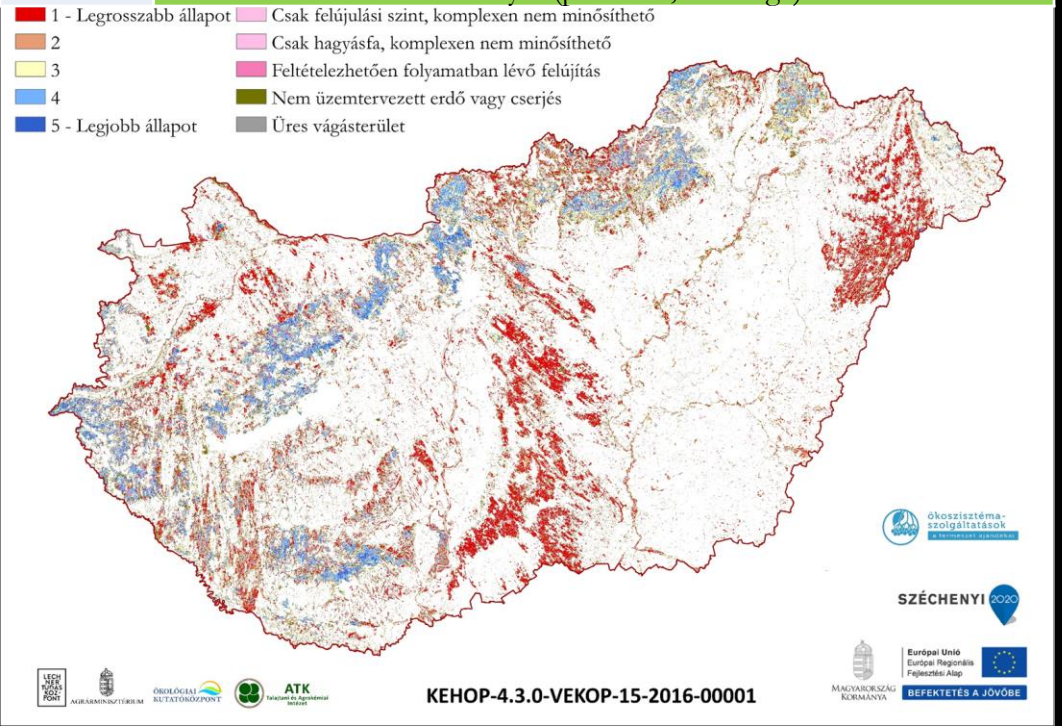
Restoration of forest ecosystems (art. 12.) - framework

- Methodology:
  - State of Europe's Forests 2020, FOREST EUROPE 2020
  - Tomppo E. et al., National Forest Inventories, Pathways for Common Reporting, Springer, 2010
  - Vogt P., et al., FAO – State of the World's Forests: Forest Fragmentation, JRC Technical Report, Publications Office of the European Union, Luxembourg, 2019.





	Forests	Platations
Composition	Species number (0, 1-2, >2)	
	Proportion (21-50, 1-20, 0)	
	Adequate proportion of dominant trees (yes-no)	Species number (0-3, 4-6, >6)
	Proportion of native tree species (30, 31-60, >60)	Proportion of native trees (0-50, 51-75, >75)
	Invasive trees (>15, 1-15, 0)	Invasive trees (>15, 1-15, 0))
Structure	Number of age groups (1, 2, >2)	
	age gap between the youngest and oldest (30 years)	
	Oldest > 100 (>60)	
	Number of diameter classes (1, 2, >2)	
	Diversity of diameter classes (Shannon : 0-0,69, >70)	
	Presence of a large tree	
	Shrub layer (presence, coverage)	



Restoration of forest ecosystems (art. 12.) - Hungary

- Ministry of Agriculture NC and Forestry
- Experts:
  - MME birds monitoring
  - Soil Science Institute SOC???
  - HUN-REN CER responsible for other indicators
- Indicators:
  - standing deadwood; lying deadwood - FRI (National Systematic Forest Inventory)
  - proportion of forests with uneven-aged stands - NÖSZTÉP with more classes
  - forest connectivity – to be calculated
  - proportion of forests dominated by native species; tree species diversity - NÖSZTÉP

Synergies and trade offs

Restoration goals by 2050

Restoration of terrestrial, coastal and freshwater ecosystems (art. 4.)

- 90% of habitats currently in poor condition will be restored to good condition.
- 100% of favourable reference areas will be established to ensure the survival of habitats.
- Continuous qualitative and quantitative improvement in the habitats of species of Community interest.
- The condition of habitats with unknown status will be assessed.
- Continuous improvement in areas undergoing restoration.
- The condition of habitats in good condition does not deteriorate.

Restoration of the natural connectivity of rivers and natural functions of the related floodplains (art. 9.)

- By 2030, free-flowing water will be restored to 25,000 km of river stretches across the EU.
- The restoration targets for freshwater and riparian habitats will be achieved (Article 4).
- The natural functions of floodplains will be restored.

Restoration of agricultural ecosystems (art. 11.)

- The agricultural bird index will increase to satisfactory levels.
- The grassland butterfly population index, soil organic carbon stock, and the proportion of highly biodiverse landscape elements (at least 2 out of 3) are increasing to satisfactory levels.
- 50% of drained peatlands have been restored, partly through reflooding.

Restoration of forest ecosystems (art. 12.)

- The forest bird index is increasing to satisfactory levels.
- At least 6 indicators (standing and lying deadwood, tree age, native tree species, tree species diversity, soil organic carbon stock, connectivity) are increasing to satisfactory levels.

Restoration of pollinator populations (art. 10.)

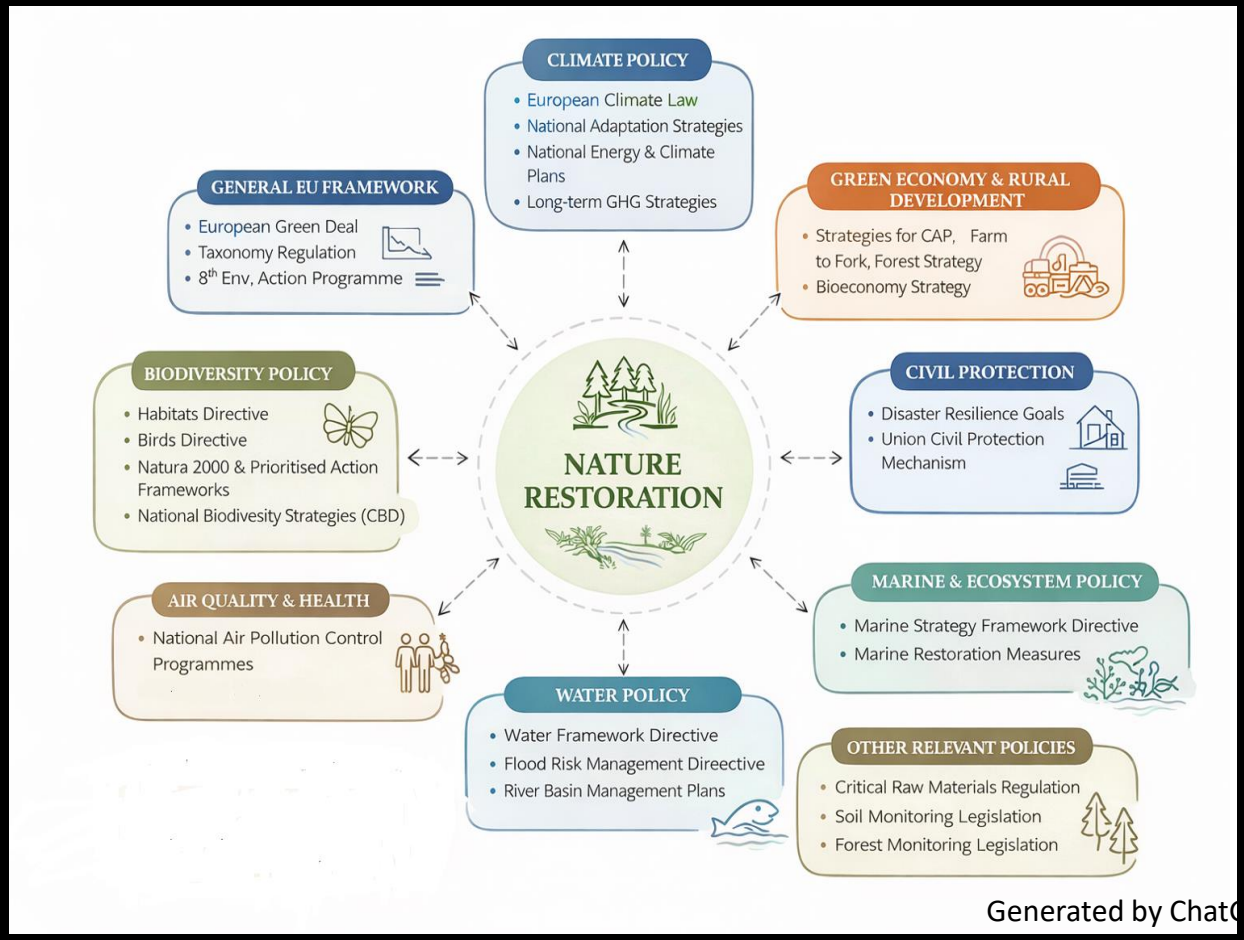
- A method to develop for monitoring pollinator populations.
- The decline in pollinator populations has stopped.
- Pollinator diversity is increasing.
- Pollinator populations will grow steadily from 2030 onward until they reach satisfactory levels.

Restoration of urban ecosystems (art. 8.)

- Urban green space and tree canopy cover are increasing to satisfactory levels.

Planting three billion additional trees (art. 13.)

Synergies (and trade offs) with other EU legislations, strategies and policies



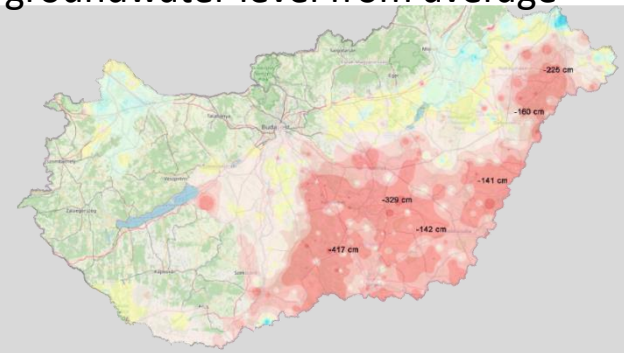
Generated by ChatG

Search for synergies

- Improving river connectivity and restoring floodplains and wetlands
- Serves to improve habitat conditions, conserve biodiversity
- Ensures natural water supply, while also promoting flood protection and climate adaptation, for example by reducing flood risks.

Identify potential conflicts

Deviation of the current groundwater level from average



Restoration of terrestrial, freshwater and coastal habitats
(4. article)

- 90% of the area of habitats in poor condition will be restored to **good condition**
- The whole of favourable reference area is created (**sustainability**)
- **Continued improvement** in the quality and quantity of habitats for species
- Continuous improvement in areas under restoration.
- The status of habitats in good condition is not deteriorating

Legal basis for water retention as part of restoration

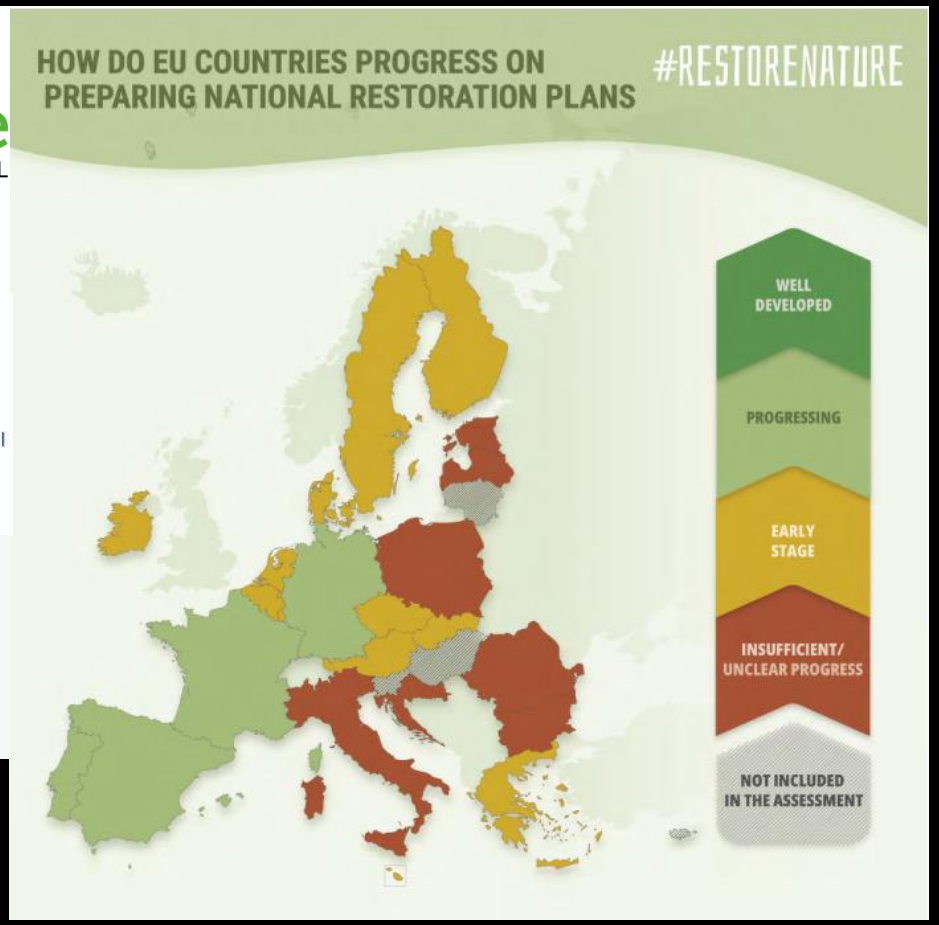
River (9. article)

- Natural functions of floodplains restored

Legal basis for removing barriers

Other Member States

EU Mid-term assessment (23/27 MS)

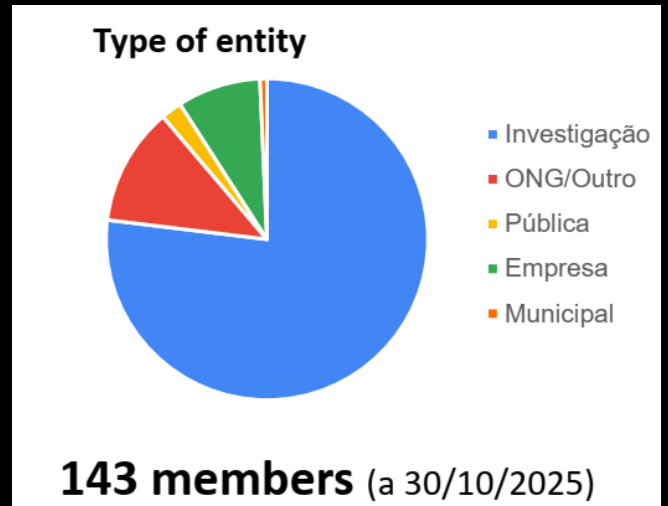


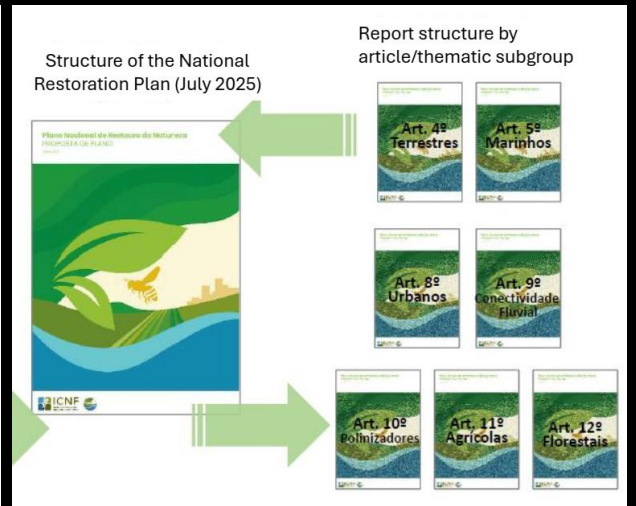
https://www.restorenature.eu/File/WWF%20-%20NRP_mid%20term%20assessment_Final.pdf

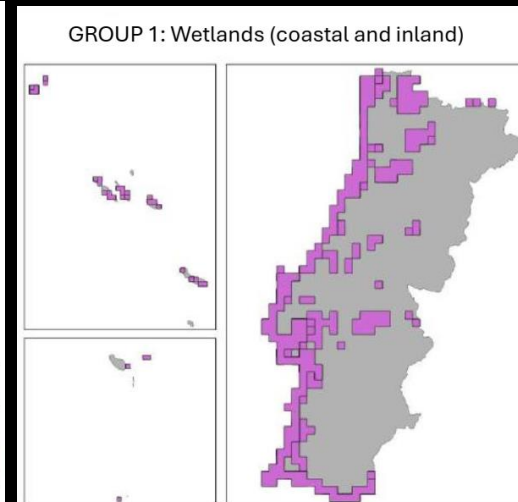
- Sciences-based (6/23)
  - knowledge gaps, scientific involvement, best evidence, scientific data
- Ambitious (1;2/23)
  - political framing, urgency of the process, breadth of restoration scope, expected use of derogations and early anticipatory action
- Inclusive (2;5/23)
  - public consultation opportunities, stakeholder involvement, openness to evidence, modalities to support a balanced dialogue, publication of a full NRP draft, and impact assessment
- Empowered (0;4/23)
  - proactively managing expectations with the public and key stakeholders; engaging responsible authorities; unlocking sufficient resources;. freeing up budgets

Portuguese National Restoration Plan

- Governance: Inter-ministerial coordination; WGs on Nature Restoration (Jan 2025); Monitoring Committee; Knowledge Network For NR
- Data: Article 17 of the Habitats Directive (2019-2024; 10 x 10 km grid; mapping only in Natura2000 areas; many unknown, FRA unavailable; baseline indices provided)
- Restoration:
  - Database on ecosystem restoration projects in Portugal (work in progress)
- Public:
  - Baseline reports, maps, questionnaires available to the public (Dec 2025)







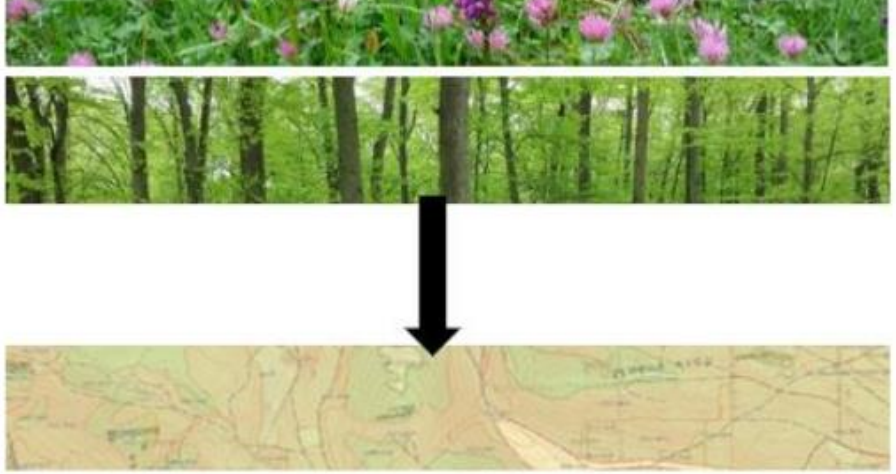
Czech NRP

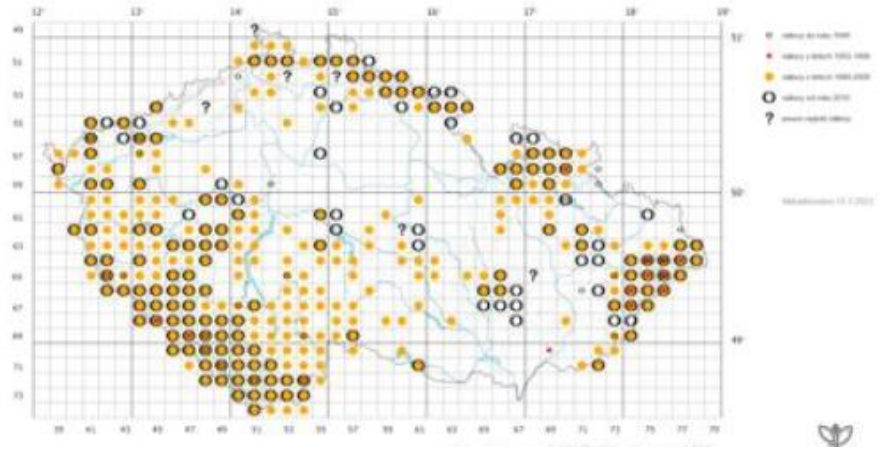
- Governance:

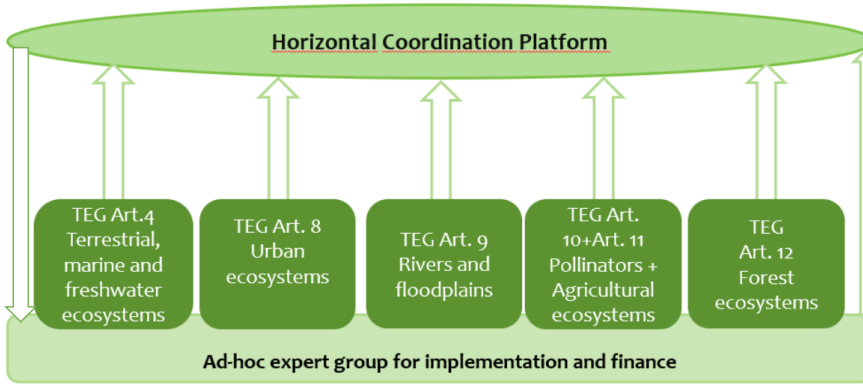
Highly participatory WGs (more than 100 entities; Dec 2023!!!!)

- Data:
  - Detail habitat mapping data on occurrence

  (2000, 2007-2019, 2020-2032)
  - 40 million records on species
- Restoration:
  - Aims: Improvement of quality within Natura2000 by 2030
  - Weakness: Lack of vision and ambition
  - FRA reflect EU accession (2004) not real loss
  - Many ongoing restoration efforts
- Public: March 2026???



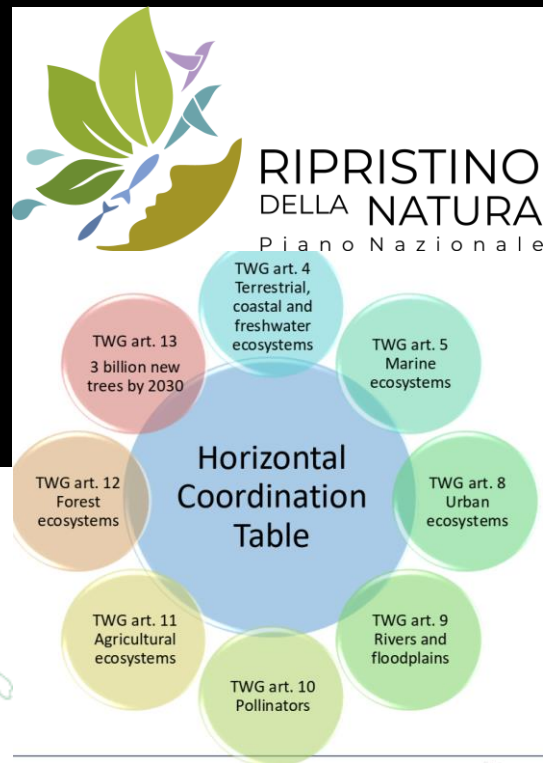


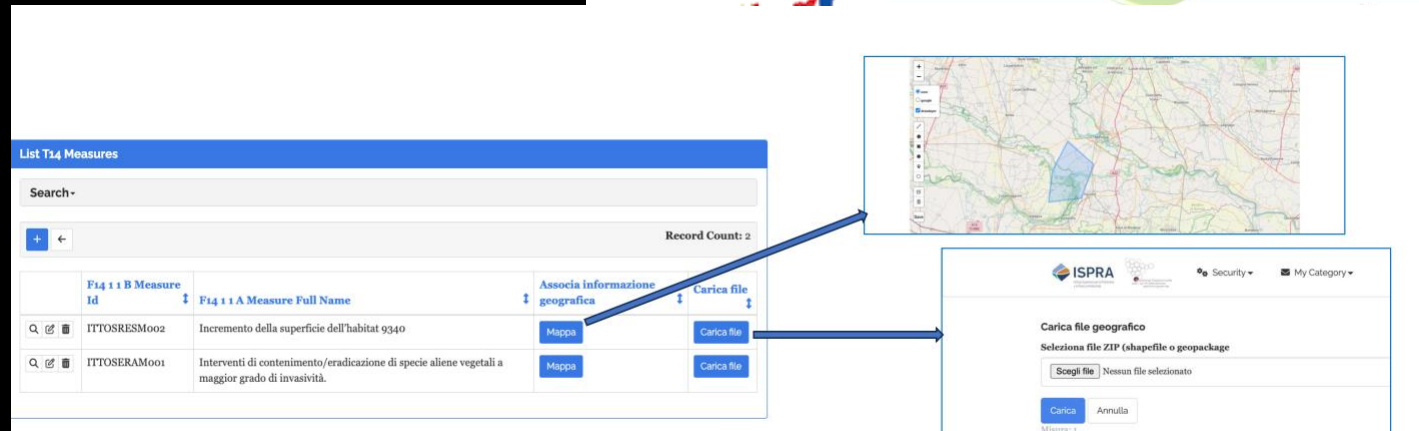


Italian National Restoration Plan

- Governance:
  - Ministerial Agreement (Oct 2025):
    Ministry of Environment and Energy Security, Ministry of Agriculture, Food Sovereignty and Forestry
  - Coordination committee; 8 WGs
  - **ISPRA** technical-scientific coordination, data collection and publication
- Data:
  - Baseline: Art.17 HD
  - Regional responsibilities, scattered data
- Restoration:
  - Data collection for restoration measures (PAF, NC)
  - Improvement/non-deterioration
  - Gap analysis
- Consultation

Expected in **April 2026**





HUN REN ÖKOLÓGIAI ÉS BOTANIKAI INTÉZET

Restoration Ecology Group

Thank you for your attention!

Bo/00145/23/8

Financing restoration (EU)

- 2025 financial overview
- The EU's Biodiversity Strategy to 2030
  - mobilizing €20 billion annually for biodiversity from EU funds, with the involvement of national and private financing
  - Furthermore, under the EU's 2021–2027 Multiannual Financial Framework (MFF: €1,216 billion),
  - 7.5% would be allocated to biodiversity by 2024, and 10% by 2026 and 2027
- Multiannual Financial Framework 2028–2034 even more tightened budgets
- EU Carbon Farming Regulation and Nature Credits Regulation
- 2023-2027 common agricultural policy – mid-term evaluation

Financing restoration (MS)

- Member States must prepare an estimate of the financing needs
- Description of the support provided to relevant stakeholders
- Planned public or private financing instruments
- EU financing instruments
- List adverse subsidies that hinder restoration

Art. 4. Favourable reference area

- ‘favourable reference area’ means the total area of a habitat type in a given biogeographical or marine region at national level that is considered the **minimum necessary to ensure the long-term viability** of the habitat type and its **typical species or typical species composition**, and all the significant ecological **variations** of that habitat type in its natural range, and which is composed of the current area of the habitat type and, if that area is not sufficient for the long-term viability of the habitat type and its typical species or typical species composition, the additional area necessary for the re-establishment of the habitat type; where the habitat type concerned is listed in Annex I to Directive 92/43/EEC, such re-establishment contributes to reaching favourable conservation status for a habitat and, in marine ecosystems, such re-establishment contributes to achieving or maintaining good environmental status