

Discussion of EU-level approach for reporting GBF Indicator A.2



Jan-Erik Petersen, EEA



Overview

The paper is a first discussion of how to implement GBF indicator A.2 at EU-level.

It briefly looks at 3 aspects:

- a) Conceptual definition for natural, semi-natural and anthropogenic ecosystem types
- b) Methodological choices for distinguishing these in Europe
- c) Suitability of existing extent and condition account data sets

Notes: a) This is a first proposal & feedback is welcome.

b) The implementation of GBF indicators at EU-level is managed by DG ENV/JRC (KCEO)

All draft GBF indicators developed by EU partners will be exposed to country review during the autumn.

Context: Ecosystem data product – policy links & technical needs

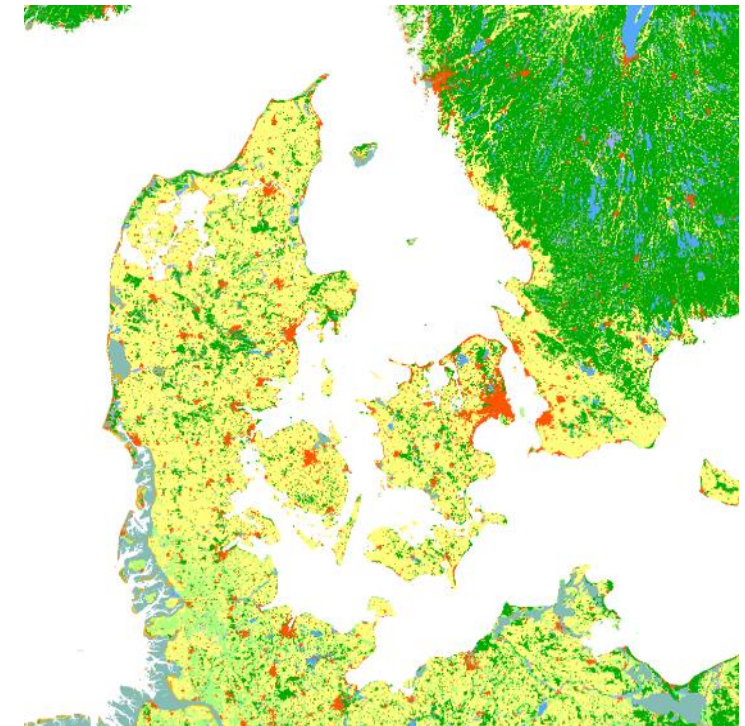
Key parameter	Value
Geographic extent (ecosystem accounting area)	European Economic Area
BSU type	Grid cell / polygon
Spatial resolution	100x100 meters (at min) 50x50 meters (preferable)
MMU	10 ha for non-urban 1 ha for urban Up to 0,1ha for selected habitats
Thematic detail (in relation to ecosystem typology)	Level 1 mandatory Level 2 preferable Level 3 for selected habitat types
Thematic accuracy	Overall accuracy of at least 85%
Temporal reference	Representative average for the reference year
Update frequency	3 years

Multipurpose product

- EU ecosystem accounting module
- 2nd EU Ecosystem Assessment
- EU Habitats directive (HD)
- EU Nature Restoration Regulation (NRR)
- Soil Monitoring Law

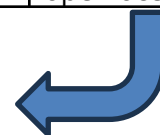


Ecosystem type Level 1	
1	Settlements and other artificial areas
2	Cropland
3	Grassland (pastures, semi-natural and natural grassland)
4	Forest and woodland
5	Heathland and shrub
6	Sparsely vegetated ecosystems
7	Inland wetlands
8	Rivers and canals
9	Lakes and reservoirs
10	Marine inlets and transitional waters
11	Coastal beaches, dunes and wetlands
12	Marine ecosystems (coastal waters, shelf, open ocean)



MECE = 'Mutually Exclusive and Collectively Exhaustive'

7. Inland wetlands										8. Rivers and canals			
7.1				7.2						8.1		8.2	
7.1.1	7.1.2	7.1.3	7.1.4	7.2.1	7.2.2	7.2.3	7.2.4	7.2.5	7.2.6	8.1.1	8.1.2	8.2.1	8.2.2



EEA-wide
Wall-to-Wall
Every 3 years

Defining the GBF Indicator A.2 categories

- Natural ecosystems are the result of natural processes and evolutionary developments over tens of thousands of years without human influence
- Semi-natural ecosystems – two interpretations:
 - a) Modified natural ecosystems that retain environmental conditions and a species pool similar to natural ecosystem types.
 - b) Near-natural vegetation types which are the result of traditional human land use (e.g. livestock grazing), which suppress climax vegetation but maintain species-rich habitat types
- Anthropogenic ecosystem types are created by human activities and maintain only a very limited set of species and habitats

Botanical definition of ‘semi-natural’ in Europe

- Linked to botanical classification of vegetation types developed in early 20th century (‘phytosociology’)
- About one third of habitats in Annex I of EU Habitats Directive correspond to this vegetation type (so-called ‘Halada habitats’)

‘Semi-natural ecosystems retain environmental conditions (i.e. soil characteristics and water cycles) and a species pool that are similar to those of natural ecosystem types. However, they are dominated by vegetation types which are the result of regular human activity (e.g. mowing or livestock grazing), which suppresses the climax vegetation typical for natural ecosystem types.’

A first look at 'naturalness' per EU L1 ecosystem type (extract)

EU ecosystem type L1	Anthropogenic	Semi-natural	Natural	Comments
Settlements and other artificial areas	Dark blue bar			This ET is considered fully anthropogenic
Cropland	Dark blue bar	Light green bar		This ET is mostly classified as anthropogenic, apart from remaining extensive systems
Grassland	Dark blue bar	Light green bar	Dark green bar	This ET can be part of all three categories
Forest and woodland	Dark blue bar	Light green bar	Dark green bar	This ET can be part of all three categories
Heathland and shrub		Light green bar	Dark green bar	This ET has natural and semi-natural expressions

Combining ecosystem extent & ecosystem condition

Three insights gained when developing this discussion paper:

- a) The European definition of ‘semi-natural’ as a specific vegetation type only works for one group of all ecosystem types
- b) We need to combine ecosystem extent and ecosystem condition data sets for identifying the ‘semi-natural’ component
- c) Thematic richness of underpinning data sets matters a lot for implementing indicator A.2
 - a) Corine Land Cover (CLC) with 44 classes more suited than other EO data sets for ecosystem extent
 - b) Suitable data on ecosystem condition (in terms of thematic fit and geo-spatial resolution) are rather scarce at EU-level

Outlook – next steps & remaining work

- Lots of work ahead on identifying thresholds between categories
- Finding suitable data sets on ecosystem condition at EU-level is a particular challenge (hopefully less so at national level)
- Review of available condition data sets for purpose of Ind. A.2 has only started; even if only available for some ecosystem types they could be very useful
- Modelled data are likely needed; e.g. on habitat distribution in Europe or likelihood of presence of High Nature Value farmland

Thank you for your interest.

Please provide feedback on the draft paper.

[Jan-Erik.Petersen@ eea.europa.eu](mailto:Jan-Erik.Petersen@eea.europa.eu)

