**Supplementary material**



**Figure S1.** Map of Land use in Cyprus (based on Corine 2012).

The categories presented in the legend represent the following Level 3 categories of the CLC2012. Urban: 111, 112, 121-4, 131-3, 141-2; Woodlands: 311-3, 324; Grasslands: 231 321; Shrubs: 323; Croplands: 211, 212, 221-3, 241-3; Sparse veg.: 331-4; Rivers-lakes: 511-2; Wetlands: 411, 421; Marine: 523

**Table S1:** Evaluation of the appropriateness of the Maes et al. (2014) indicators (agroecosystems) for their use in MAES in Cyprus (in blue are the indicators introduced for Cyprus; not present in Maes et al.)

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| **Indicator suitability** | **Green** | **Provisioning**1. Livestock data (LU/ha, Ton meat/yr/region)2. Grazing density (number of animals per ha)3. Yields of fiber crops (ton/ha; ton dry matter/ha; MJ/ha)4. Fiber crop area (ha)5. Number of beehives**Regulating****-****Cultural**6. Number of visitors in agricultural/rural areas  | **Provisioning**1. Yields of food and feed crops (ton/ha; ton dry matter/ha; MJ/ha)2. Energy from manure treatment systems (kWh)3. Number of hunter licenses by Game and Fauna Service (GFS)**Regulating****-****Cultural**4. Number of bird-watchers 5. Number of scientific studies related to agroecosystems | **Provisioning**1. Agricultural area (ha)2. Hunting areas and seasons 3. Areas important for groundwater abstraction in agroecosystems4. Areas with access to treated municipal wastewater for irrigation5. Groundwater bodies location in the island 6. Yields of feed or food crops (ton/ha; ton dry matter/ha; MJ/ha)7. Area of energy crops (ha)8. Biofuel, biodiesel, bioethanol (kToe)9. Agricultural areas equipped with irrigation facilities**Regulating**10. High Nature Value Farmland (HNVF)11. Number of floods/year that cause problems in agricultural areas.12. Traditional plantations/orchards area (ha)13. Area cultivated with legumes 14. Humidity Index15. Land Use Change**Cultural**16. Density and number of bicycle routes and trails into agricultural and forest land.17. Number of environmental info centers into agricultural areas.18. Number of agricultural/ traditional festivals19. Religious monuments, pilgrim paths in agro-ecosystems20. Number of traditional, PDO (Protected Designation of Origin) and PGI (Protected Geographical Indication) products in an area 21. Number of nature/agricultural landscape photos uploaded on web portals22. Number and capacity of agritourist hotels/ motels in an area23. Landscape degree of hemeroby 24. Agricultural landscape structure.25. Symbolic species26. Percentage of agricultural land into protected areas  |
| **Orange** | **Provisioning**1. Use of animal feed (Tons/year)2. Honey production and consumption per year3. Yields of crops used for medicinal and cosmetic purposes (ton/ha; ton dry matter/ha; MJ/ha)**Regulating**4. Retention capacity of water in agricultural soils**Cultural** - | **Provisioning**1. Manure production (ton/year )**Regulating**2. Habitat suitable for bees (distribution and area) P surplus in agricultural land (kg P/ha/year ).3. N surplus in agricultural land (kg N/ha/year ).4. Areal coverage of vegetation features supporting pollination (hedgerows, flower strips, High Nature Value Farmland etc.) 5. Chemical status of surface water in agricultural areas6. Ecological status of surface water in agricultural areas7. Groundwater quality/ salinization8. Groundwater recharge rate9. Carbon sequestered by permanent crops10. CO2 emissions from agriculture and animal husbandry (ktonnes CO2 equivalents/year) – Carbon Footprint.**Cultural**11. Expenditures related to hunting 12. Number of farms offering training/ education (didactic farms) | **Provisioning**1. Wild game species and population reared and released each year
2. Groundwater bodies with salinization problems
3. Water use in agriculture.
4. Recycled (treated) water use in agriculture (m3/year).
5. Surface water use for irrigation (m3/year).
6. Percentage of agricultural and pasture land into flood plains

**Regulating**1. Soil organic matter content
2. pH of the soil surface
3. Cation Exchange Capacity in soils

**Cultural**1. Remarkable trees
2. Symbolic species
 |
| **Red** | **Provisioning**1. Habitat distribution for wild mushroom species2. Production of mushrooms 3. Estimation of the number of game species in each hunting area 4. Methane production from manure treatment (Ton/year)**Regulating**5. Hedgerows length in agricultural land6. Soil cover percentage in agricultural land 7. Hedgerow density8. Pollination potential9. Pollinators distribution10. Pollinator species abundance11. N balance in agricultural and pasture land12. Number of visitors/ tourists in agricultural land**Cultural**13. Public perception for the value of the agricultural landscape14. Willingness to pay for landscape measures in cropland or grassland areas | **Provisioning**-**Regulating**1. Pollutants concentration in agricultural soils. 2. Pesticides concentration in ground and surface water.3. Nitrate concentration in surface and ground water4. Soil erosion risk**Cultural**- | **Provisioning**1. Hunting activity in each area.2. Game species population size.3. Groundwater pumped per area and year (m3/year).**Regulating**4. Nutrients concentration in agricultural land (C, N, P, K, Ca, Mg, S).**Cultural**-  |
|  |  | **Red**  | **Orange** | **Green** |

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|  | **Very high** |  |  | **Moderate** |  |  | **Very low** |
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|  | **High** |  |  | **Low** |  |  |  |

**Data appropriateness for the determination of indicators for MAES in agricultural land and pastureland.**

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| **Indicator appropriateness** | **Green** | **Provisioning**1. Number of beehives2. Distribution of foraging areas in forest; estimate of grassland/shrubland (NPP)**Regulating**3. Surface of healthy Forests (quality parameter of forest health)**Cultural**-  | **Provisioning**1. Amount of meat (hunting)2. Value of game3. Hunting records (killed animals)4. Number of hunting licenses**Regulating**-**Cultural**5. Number of bird-watchers6. Number of scientific research documents for forests | **Provisioning**1. Hunting areas and seasons 2. Important areas for groundwater abstraction 3. Forest biomass stock4. Forest biomass increment5. Forest for timber, pulp wood, etc. production6. Commercial forest tree volume & harvesting rates7. Trees (presence): pines for resins8. Tree species (timber trees)9. Wood consumption (industrial roundwood, fuelwood)**Regulating**10. C storage in forest 11. C sequestration by forest (NPP; NEP)12. Forest soil condition: chemical soil properties13. Areas where aquifers are located14. Forest area (ha)15. Area of peri-urban forests16. Forest species distribution17. Investments in forests maintenance/ management 18. Protected Areas for nursery populations19. Forest area designated for habitat-landscape protection: Natura2000, etc**Cultural**20. Density and number of bicycle routes and trails into agricultural and forest land 21. Number of environmental information/education centers 22. Number and density of natural trails or nature study trails23. Number of visitors24. Number of nature/agricultural landscape photos uploaded on web portals25. Distribution of sites of emblematic plants/forest/species26. Religious monuments27. Number and capacity of hotels/motels in forest areas28. Percentage of agricultural land into forest area |
| **Orange** | **Provisioning**1. Habitat and plants distribution for wild bee species2. Honey production (modelling)3. Distribution of plants used in medicine and cosmetics industry4. Host-species (trees) abundance5. Restoration costs6. Amount of dead wood**Regulating**7. Important areas for water infiltration and headwater surroundings covered by forest8. Drought and water scarcity9. Special protection areas for preventing mass flows linked to the River Basin Management Plans**Cultural**- | **Provisioning**1. Number of goats/sheep in forest land (e.g. Akamas peninsula)2. Animal production (milk, meat, cheese)3. Water supply and discharge (hydrological modelling)**Regulating**4. Albedo maps5. Leaf Area Index6. Erosion protection (modelling)7. Area of forest designated to the prevention of soil erosion8. Area eroded by wind and water9. Forest cover in high slope areas (GIS analysis)10. Forest area designated for attenuation of mass flows11. Erosion risk mitigation12. Flood risk mitigation**Cultural**13. Hunting expenditures  | **Provisioning**1. Number of pray reared and released 2. Wood fuel stock (fraction of forest biomass stock) 3. Wood fuel production (fraction of forest biomass increment)4. Distribution of trees for wood production5. Fuel wood consumption 6. Natural mineral water production7. Areas managed for gene conservation**Regulating**8. Sulphur (S) and Nitrogen (N) retention and removal9. Urban and sub-urban forest area **Cultural**10. Emblematic species presence 11. Important Bird and Biodiversity Areas (IBAs)12. Area available/accessible for recreation13. Condition of forest-associated priority species on habitat and birds directives14. Distribution of sites with forest designated as having cultural values15. Number of sites with recognized cultural & spiritual value16. Number of Ecotourism operators into forest land |
| **Red** | **Provisioning**1. Wild berries, fruits and mushroom harvest2. Distribution of wild berries (modelling)3. Production and consumption of mushrooms4. Population status for game species 5. Distribution of plants species with biochemical/pharmaceutical uses**Regulating**6. Sediments removed from dams, lakes, rivers7. Pollination potential (maps)8. Abundance of pollinators (maps)**Cultural**-  | **Provisioning**-**Regulating**1. Erosion risk mitigation**Cultural**- | **Provisioning**1. Area of forests accessible for hunting2. Surface water provisioning in rivers located in forest areas 3. Rivers discharge4. Water in dams/ reservoirs5. Water consumption per capita**Regulating**6. Forest area (designated to preserve water resources)**Cultural**- |
|  |  | **Red** | **Orange** | **Green** |

**Table S2:** Evaluation of the appropriateness of the Maes et al. (2014) indicators (forests land) for their use in MAES in Cyprus (in blue are the indicators introduced for Cyprus; not present in Maes et al.)

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|  | **Very high** |  |  | **Moderate** |  |  | **Very low** |
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|  | **High** |  |  | **Low** |  |  |  |

 **Data appropriateness for the determination of indicators for MAES in forest land.**

**Table S3:** Evaluation of the appropriateness of the Maes et al. (2014) indicators (freshwater) for their use in MAES in Cyprus (in blue are the indicators introduced for Cyprus; not present in Maes et al.)

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| --- | --- | --- | --- | --- |
| **Indicator suitability** | **Green** | **Provisioning**1. Wild plants used in gastronomy, cosmetic, pharmaceutical uses (data on industries collecting the plants)**Regulating**-**Cultural**2. Number of visitors/ fishing licenses3. Bathing areas and number beaches (lakes and streams)  | **Provisioning**1.Number of licensed fisherman (anglers, professional and amateur fishermen) per fishing category (fishing net, fishing rod, fishing weir/reservoirs)2. Estimated number of fishing fleet for professional fishermen3. Wood produced (tons or m3) by riparian forest4. Surface of exploited (fiber harvesting and timber) riparian forest and reeds 5. Products (number and type) from reeds (eg Fasouri wetland)6. Firewood produced by riparian forests7. Number of fishing licenses **Regulating**-**Cultural**8. Tourism revenue | **Provisioning**1.Number and area of the dams that fishing is allowed2. Number and production (per species) of fish farms3. Freshwater aquaculture production (e.g. trout production)4. Water consumption for drinking5. Number and capacity of dams6. Number of boreholes in watersheds7. Volume of water bodies8. Stream water discharge9. Extent of permanent flow section per stream **Regulating**10. Nitrate Vulnerable Zones (NVZs) 11. Area of riparian forests12. Number and efficiency of wastewater treatment plants13. Volume of treated wastewater (tons/year)14. Area of wetlands15. Floodplains areas (and record of annual floods)16. Floodplains area17. Area of wetlands located in flood risk zones18. Ecological status19. Morphological status20. Number of introduced vertebrates in rivers and riparian areas21. Chemical status22. Surface of flood-prone areas23. Percentage of wetlands covered by Natura 2000 areas**Cultural**24. National Parks and Natura 2000 sites 25. Waterfalls26. Fishing reserves27. Classified sites (world heritage, label European tourism)28. Number of Environmental Centers in wetlands areas29. Natural heritage and cultural sites30. Number of visitors (surface or number of wetlands located next to a bike path)31. Number or area of wetlands near nature study trails or natural trails for walking32. Number or area of wetlands that have birdwatching or facilities for educating/ informing citizens.33. Contrasting landscapes (lakes close to mountains)34. Sacred/religious sites (catastrophic events, religious places)35. Proximity to urban areas of scenic rivers or lakes |
| **Orange** | **Provisioning**-**Regulating**1.Nutrient retention2. Sediment retention3. Wetland value to conserve pollinator populations4. Number of introduced aquatic invertabrates **Cultural**5. Number of visitors (national parks including rivers, lakes and wetlands) | **Provisioning**1. Fish production (tons/year) per category**Regulating**2. Ground water quality (salination)3. Holding capacity; flood risk maps4. Conservation of river and lake banks and wetlands5. Conservation status of wetlands6. Riparian zone width7. Biodiversity value (species diversity or abundance, endemics or red list species and spawning location)8. Alien species (introduced riparian and aquatic plants)**Cultural**9. Tourism revenue10. Number of visitors11. Fish abundance 12. Fish monetary value from angling13. Number of scientific projects, articles, studies14. Number of unions, foundations and NGOs dealing with animals, plants, nature and the environment | **Provisioning**1.Surface water availability 2. Surface water abstraction 3. Water use per sector**Regulating**5. Minimum ecological flow 6. Water flow downstream of dams7. Indicators on water quality (microbiological data for bathing waters, BOD5 nitrate conc, phosphate concentration, oxygen conditions, saprobiological status)8. Nutrient load9. Trophic status 10. Ecological status of riparian zone 11 Volume and hydrological flow 12. Water holding capacity of soils**Cultural**14. Known bird watching sites 15. Quality of fresh waters for fishing 16. Monitoring sites (by scientists)17. Number of annual cultural activities 18. National species or habitat types |
| **Red** | **Provisioning**1.Status of fish population (Species composition, 2. Age Structure, Biomass kg/ha)**Regulating**3. Carbon storage per unit of area4. Potential mineralization or decomposition5. Denitrification6. Nitrogen fixation7. Dissolved oxygen**Cultural**8. Social perception of wetlands | **Provisioning**-**Regulating**-**Cultural**- | **Provisioning**-**Regulating**1.Hydromorphic soils 2. Fluvisols surface**Cultural**- |
|  |  | **Red**  | **Orange** | **Green** |

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|  | **Very high** |  |  | **Moderate** |  |  | **Very low** |
|  |  |  |  |  |  |  |  |
|  | **High** |  |  | **Low** |  |  |  |

**Data appropriateness for the determination of indicators for MAES in freshwater.**