Indicator Factsheet: Temporal crop diversity (crop sequence)

Indicator: Temporal crop diversity (rotation)	
Description	The indicator describes the crop sequence of the main crop on a plot over a period of 7 years (P). The quantification of temporal diversity is based on two approaches: a) the number (N) of main crop types in the period P (temporal richness) b) the frequency of occurrence of the main crop types (RP_i) relative to the crop management recommendation (RPR). This is determined for all main crop types (i) (QRP_i). The values are aggregated at the report level for the reference units using statistical methods across all arable land or areas of a major crop species.
Data basis	**Remote sensing**: maps (nationwide) of agricultural land use (Blickensdörfer et al., 2022). See Annex II for the classification catalogue. **Agricultural data**: Crop type and other land use, including geometries (field blocks or parcels) from InVeKoS (nationwide).
Calculation	(a) $N\{[1,P]\}$ (b) $QRP_i = \frac{RP_i}{RP_p}\{[0,P]\}$ N = number of crop types in period P (temporal richness); RP_i = occurrence (as a percentage) of crop type class i in period P; RP_p = crop management recommendation based on RPi)
Spatial reporting level	**Coverage:** National; **Resolution**: Administrative units; Hexagons (100 ha, proportion of open land > 25%); **Respective** land category (TAL, UAA, OL)
Reporting period / interval	from 2005 (IACS) or 2017 (remote sensing) / annually
Interpretation	The value N provides direct information on the temporal diversity of cropping through the number of different crop types. High values correspond to high land-use diversity. The indicator quantifies the crop sequence independently of the value of individual elements (crop types) for the biological diversity of organisms. It thus provides a generic indicator of habitat diversity as a component of biological diversity. The values for RP_i and QRP_i provide information on the dominance of individual elements in the crop sequence and are therefore better suited for a region- and crop-specific assessment of crop sequence components. The interpretation of the values must therefore be carried out depending on the respective value of the crop type for biodiversity.
Limitations	The spatial resolution of the input data, as well as the spatial and content-related representativeness of the agricultural data, influence the indicator values. The indicator is only presented for reference units where the proportion of open landscape is at least 25%.
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