Indicator Factsheet: Humus balance

Indicator: Nutrient input **Sub-indicator: Humus balance**	
Description	The humus balance encompasses the management-related changes in humus inputs to soils used for arable farming and horticulture. The spatial distribution and development of the balance serve as indicators for assessing the condition and trends in soil carbon content in open land areas.
Data basis	Agricultural land use and livestock production from the Farm Structure Survey (FSS) as well as land use from the Digital Landscape Model (Basis-DLM) and also official data on fertilisation, yields, biogas production, compost, etc. Regionalisation is done utilising by IACS data and geometries.
Calculation	The humus balance is derived by the procedure of the Federation of Laboratories for Agricultural Research (VDLUFA), based on calculating the difference of inputs (root and crop residues, green manure, organic fertilisers, etc.) and losses resulting from decomposition. The latter are influenced by the soil properties (soil type), site factors (weather, climate, etc.), and cultivation methods.
Spatial reporting level	**Coverage**: National; **Resolution**: Municipal level; **Reference area**: Arable land
Reporting period/ interval	Annual; calculated in cooperation with projects assessing the environmental impact of the Common Agricultural Policy (CAP) ('GAPEval' projects)
Interpretation	The humus balance can be used to estimate whether sufficient organic matter is being added to the soil to maintain its humus content. The presence of long-term low balances has been demonstrated to have a detrimental effect on the soil's buffering capacity, thus posing a threat to both habitat and species diversity. Too low: less than 75 kg C per ha balanced: 75 to 100 kg C per ha sufficiently high: over 100 kg C per ha
Limitations	The quality and representativeness of the data, in addition to alterations in methodology and the coefficients employed, have a significant influence on the evaluation outcomes. However, data remain limited regarding the extent to which straw remains in the field or is transported over long distances, as well as the proportions of farm manure applied to arable land or grassland. Field record validation and soil analyses are needed on national scale. In particular, on land used for livestock farming, a high supply of farm manure with a low C:N ratio can lead to high decomposition rates.
Latest Update	2016