

Site-adapted options for the use of cultivated peatlands – decision support by DSS-TORBOS

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Initial situation

Conventional agricultural and silvicultural use of peatlands requires a lowering of the groundwater level by increasing drainage intensity. This manner of cultivation is not site-adapted regarding the soil-water-specifics of peatlands and causes several problems:

- degradation of organic soils,
- release of nutrients,

- reduction of agricultural usability,
- reduction of yield capacity,
- increased emissions of greenhouse gases
- loss of biodiversity.

The high demand for area for cultivation of renewable resources leads to a further intensification of land use and problems aggravate.

Site-adapted peatland use with DSS-TORBOS

DSS-TORBOS is a free tool for guidance and decision support of:

- farmers,
- agricultural and silvicultural consultants,
- policy makers,

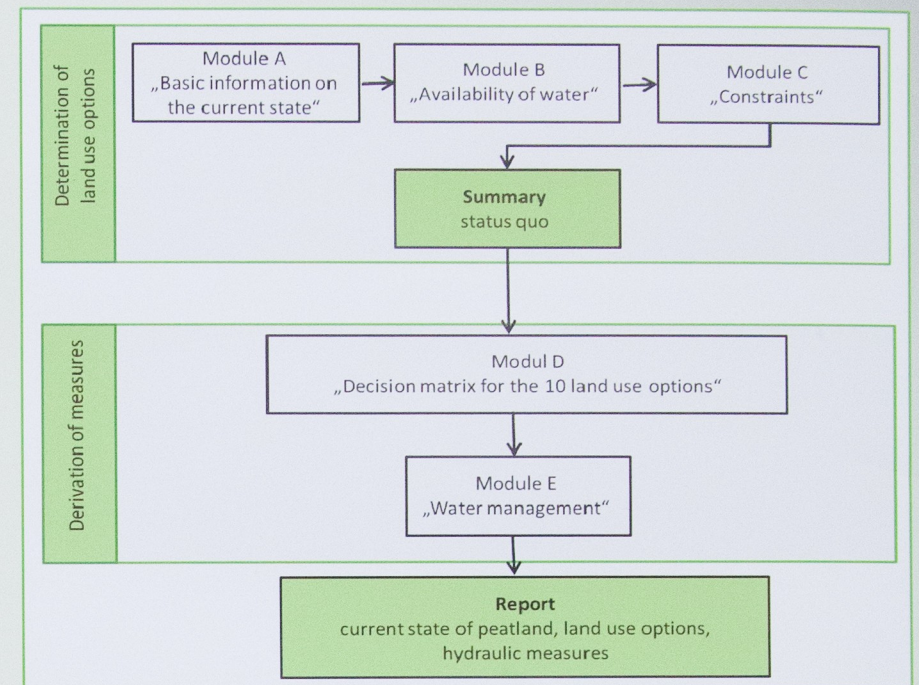
regarding a **peat-conserving and sustainable use of peatlands**. The suggested land use options focus on the **specific site-suitability** of a concrete peatland and the long-term usability.

The internet-based DSS (Decision Support System) is predicated on a modular structure. The user is guided through the system by Yes-No-questions, supported by

various background information and aids.

At first, the user is questioned with respect to site characteristics, water availability und possible constraints regarding the specific peatland. As a result, the DSS composes a printable summary on the recent state of the peatland and suggests site-adapted land use options for future cultivation. The system includes 10 different options that are issued for different water levels. Standardised portraits illustrate the different land use options concisely and comparatively. The final report also includes specific indications of a suitable water management.

Basic structure of DSS-TORBOS with modular concept

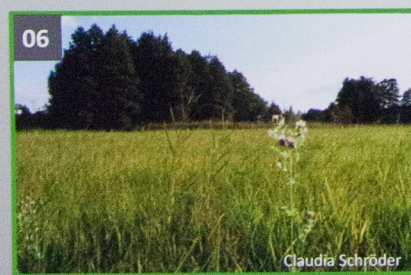
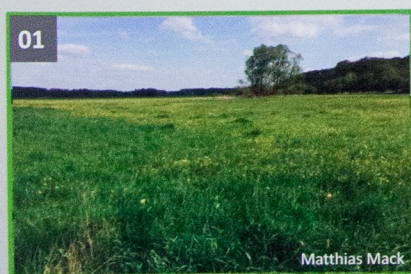
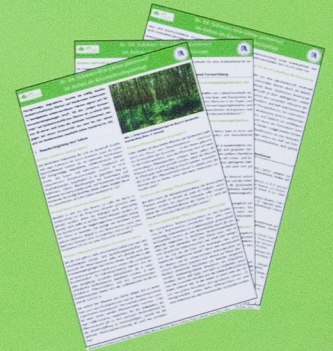


Land use options integrated in the DSS-TORBOS with indication of respectively suitable groundwater levels

Water levels of peatlands and other wetlands (according to Koska 2001 in Succow, M. & Joosten, H. (eds.): Landschaftsökologische Moorkunde. Schweitzerbart, Stuttgart)	designation	2-	2+	3+	4+	5+
		moderately dry	moderately moist	moist	very moist	wet
	annual median of water level [cm below surface]	> 80	45 – 80	20 – 45	0 – 20 cm	≤ 0
Land use options						
	01 extensive meadow on moderately dry to moderately moist sites					
	02 extensive pasture on moderately dry to moderately moist sites					
	03 willow (<i>Salix</i>) in short rotation coppice (SRC)					
	04 black alder (<i>Alnus glutinosa</i>) in long rotation forestry (LRF)					
	05 extensive pasture on moist sites					
	06 extensive meadow on moist to wet sites with various vegetation					
	07 extensive meadow with reed canary grass (<i>Phalaris arundinacea</i>)					
	08 black alder (<i>Alnus glutinosa</i>) as high grade wood					
	09 reeds					
	10 wet meadow with water buffalo (<i>Bubalus bubalis</i>)					

Content of the portraits of land use options

- site suitability
- course of cultivation
- harvest
- infrastructure and logistics
- processing and marketing
- applications, approvals, funding
- impact on peat soil
- supplemental information



DSS-TORBOS is available free of charge under: www.dss-torbos.de (in German language)



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