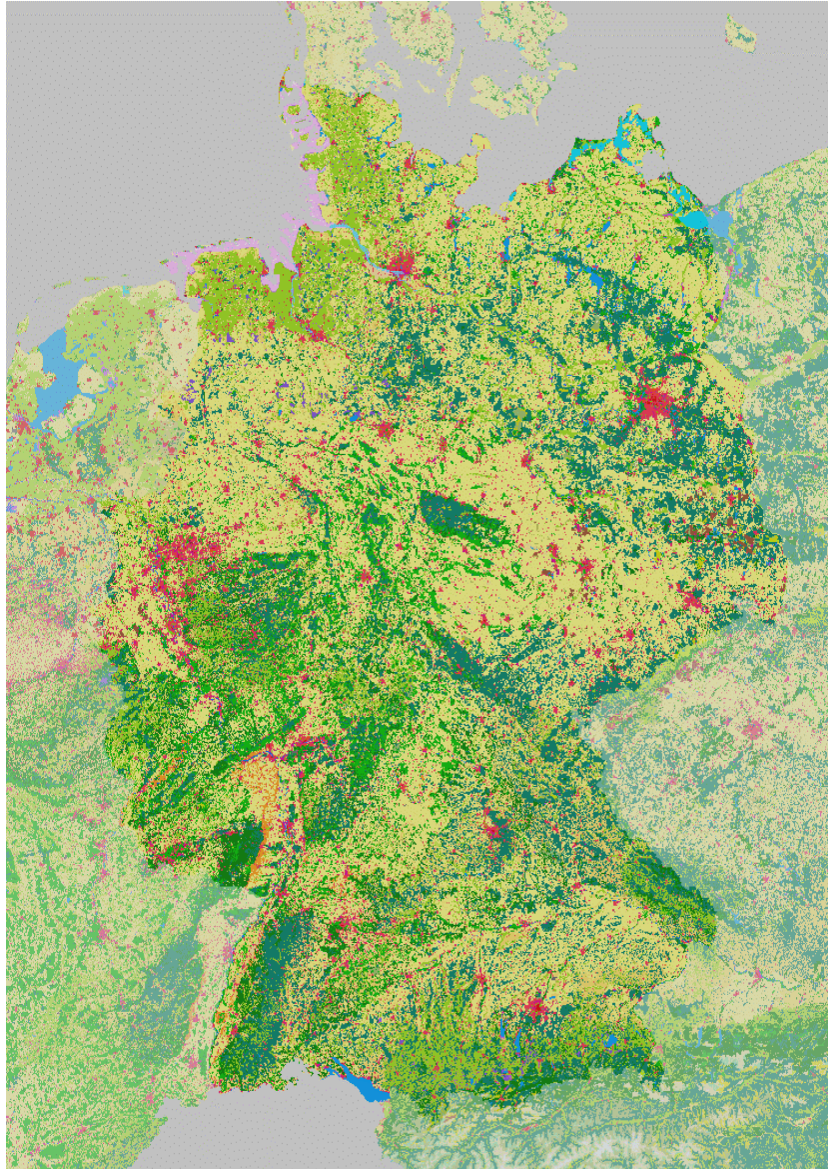




CORINE Land Cover (CLC) in Germany



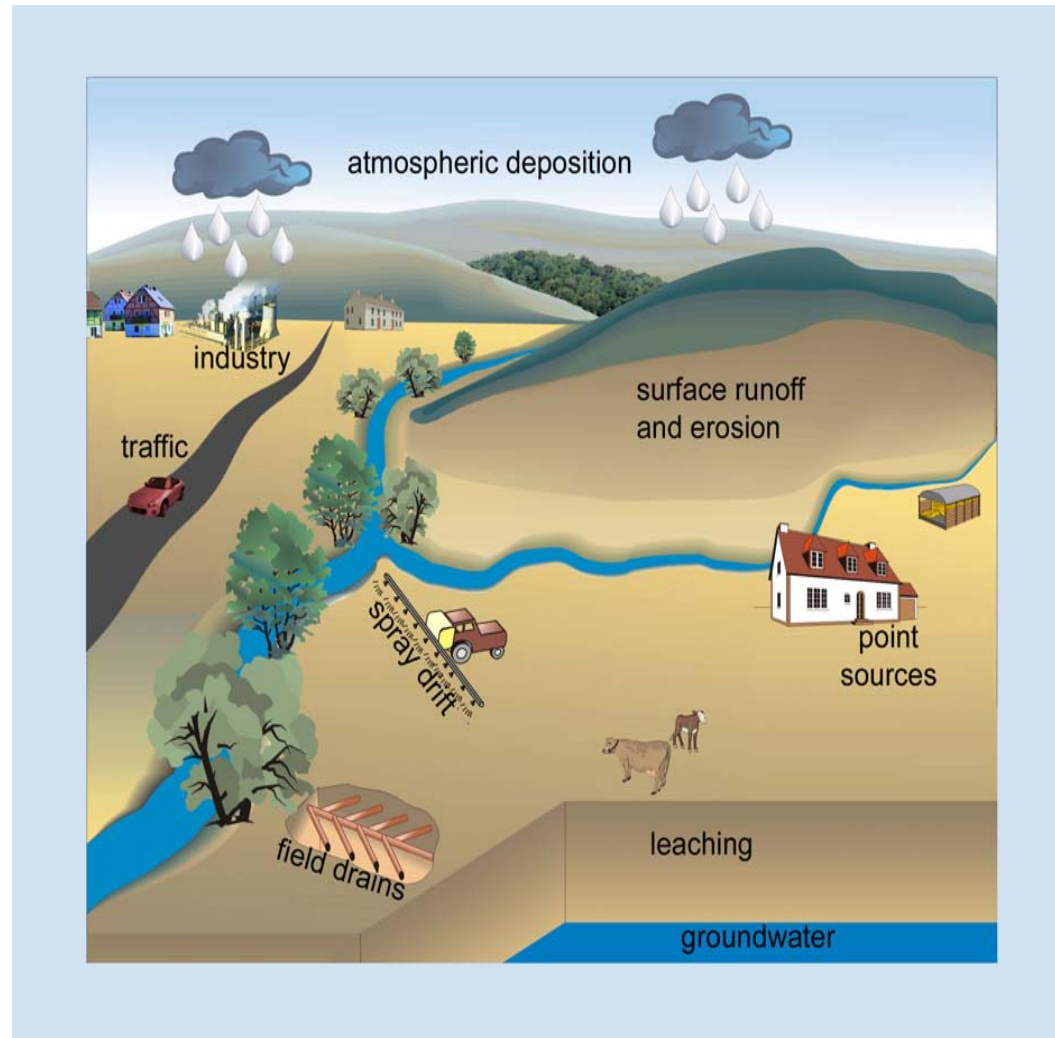
The German View CORINE Land Cover Data Supporting the Implementation of National Policy and International Reporting Obligations

Birgit Mohaupt-Jahr,
Federal Environmental Agency
Hartmut Streuff,
Federal Ministry for the Environment, Nature
Conservation and Nuclear Safety



Land Cover Information → Basis for Environmental Assessments

geo-referenced data of land use and land use change
→ driving forces, pressures, state





Why CLC?

international regulations → national implementation

Germany → federal level, state level (16 Länder)

there is a need for

- harmonised data → comparability
- suitable spatial resolution → consistency
- reliable methodology → continuity



CLC Users in Germany

- public and private planning offices
- weather services
- environment protection bodies
- forest and agricultural institutions
- traffic and tourism consultants
- universities
- private enterprises
- ...

CLC Applications for Environmental Policy

- UNECE Long-Range Transboundary Air Pollution (*LRTAP*)
 - EU Water Framework Directive (*WFD*)
 - European Soil Thematic Strategy (*STS*)
 - regional planning
 - environmental monitoring programmes
 - development of environmental indicators
- 3 examples



UNECE Geneva Convention Long-Range Transboundary Air Pollution

Objectives

- agreement on emission reduction ceilings
- limit air pollution
- effect-based approach
 - critical loads, critical levels = estimated threshold for exposure





UNECE Geneva Convention Long-Range Transboundary Air Pollution

Products

- models and maps of critical loads/levels and their exceedances
- integrated maps on UNECE level, based on national maps
- land use specific deposition rates

→ harmonised data and procedures



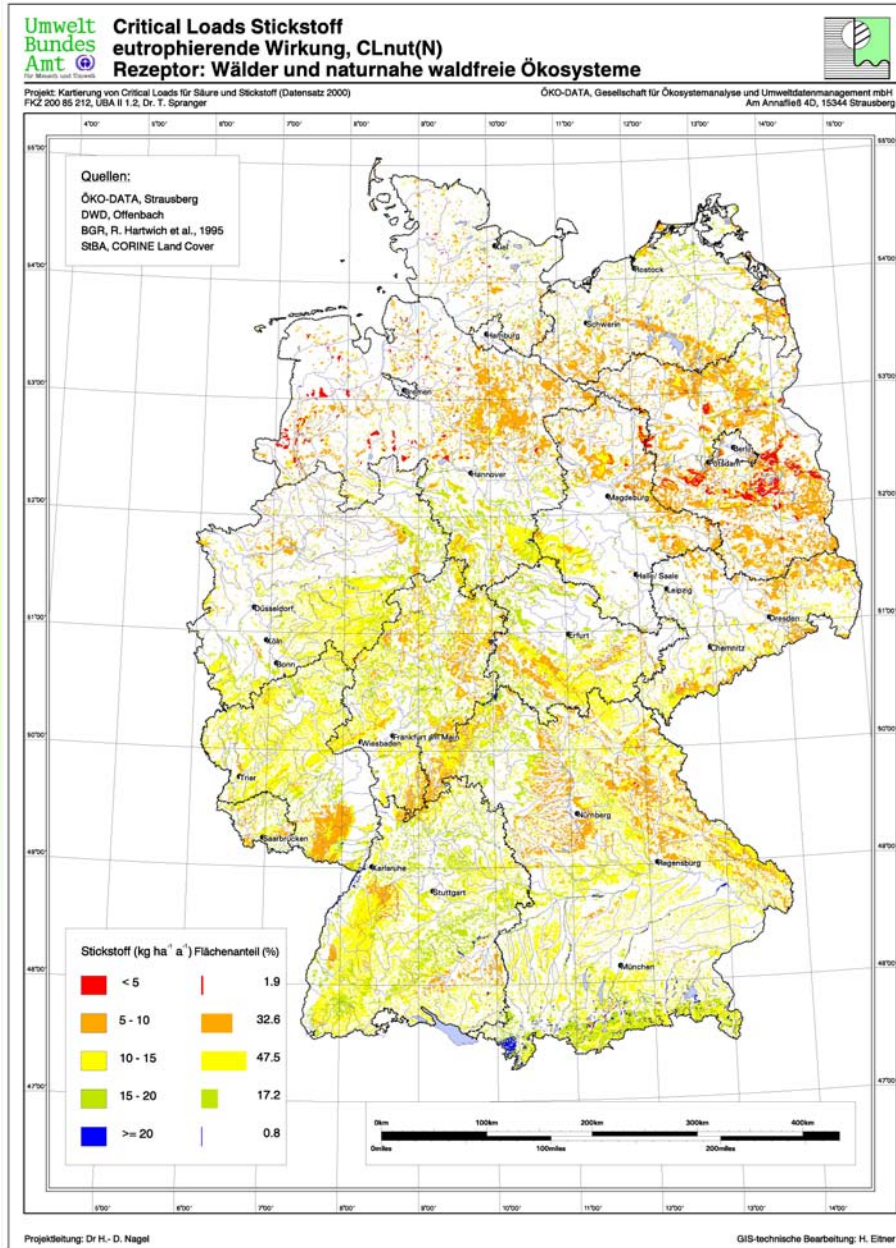
LRTAP: Application of CLC

- location of ecosystems which countries would like to protect
- description of these ecosystems
- deposition rates based on substance transport and impact models

agreed harmonisation procedure!











LRTAP: Example



Critical Load for Nitrogen

Nitrogen (kg/ha/year)

Percentage of receptor area (%)

	< 5		1,9 %
	5 - 10		32,6 %
	10 - 15		47,5 %
	15 - 20		17,2 %
	>= 20		0,8 %

Water Protection Water Framework Directive

Objectives

- good status of water bodies in the EU by 2015
- no deterioration

Reporting Obligations

- analysis of pressures, impact, and risk of failing the objectives (2004)
 - measuring programmes, river basin management plans (2009, 2015, 2021)
 - compliance with the objectives (2015, 2021, 2027)
 - common river basin district reports
- harmonised data and procedures needed!
- **Germany: federal level, state level (16 Länder)**
- **Europe: cross boarder water catchment areas and river basins**

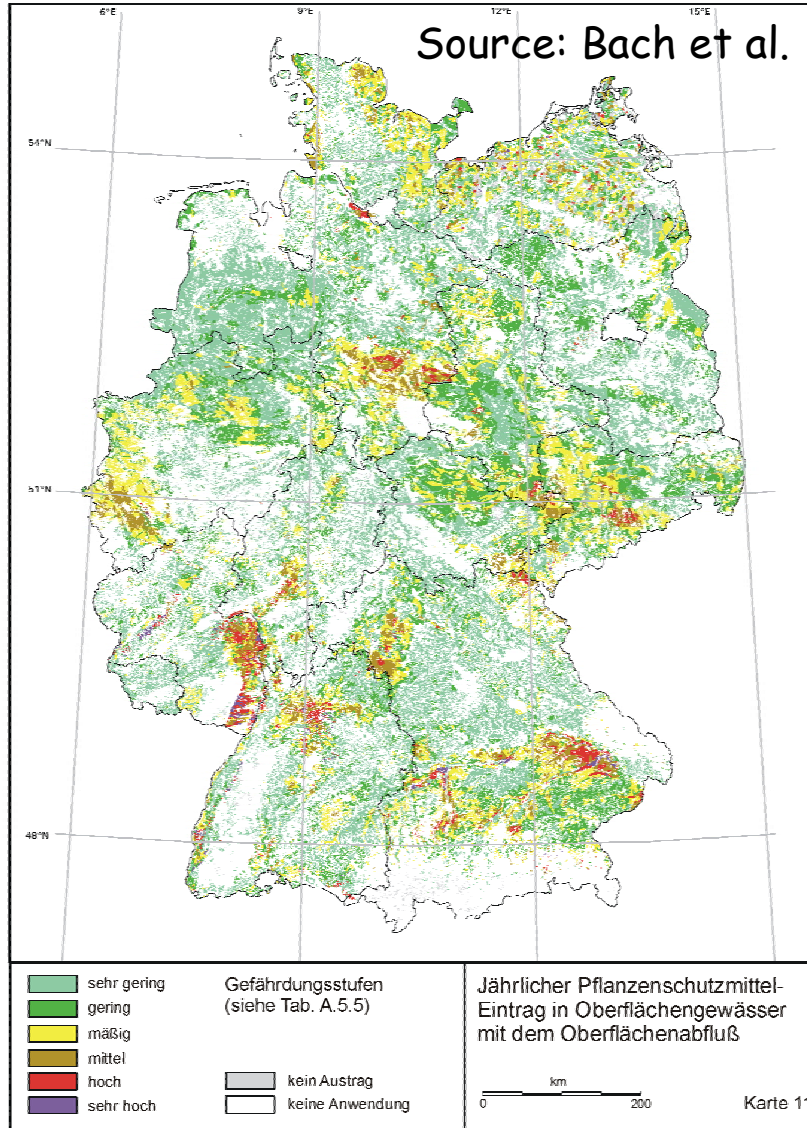


WFD: Application of CLC

- location of driving forces (industry, agriculture, ...)
 - derivation of substance information (what, how much, where)
 - estimation of model input parameters (evapotranspiration, leaching, runoff, ...)
- **agreed harmonisation procedure**
- LAWA recommends to report based on CLC
 - 2 implementation guidelines recommend to use CLC (IMPRESS and draft reporting)



WFD: Example



substance input modelling into waters

Example:

pesticides runoff potential

the spatial distribution depends on
parameters of

- ▶ the substances
- ▶ the soil
- ▶ the water body
- ▶ land use

runoff potential is high in

- ▶ vineyards,
- ▶ loess and marsh land
- ▶ sugar beat, potatoes, corn fields
- ▶ sloppy arable land



European Soil Thematic Strategy

Objectives: protection of soil from

- erosion
- decrease of organic material
- soil contamination
- sealing
- soil compaction
- decrease of soil biodiversity
- salinisation
- flats and land slides

Products e.g. for erosion risk assessment

- national maps
- exploration of management methods for erosion reduction
- development of agri-environmental indicators (good agricultural practice)
- EU indicators on actual erosion and erosion risk

→ harmonised data and procedures needed!



STS: Application of CLC

- location of areas
- location of driving forces
- cultivation index

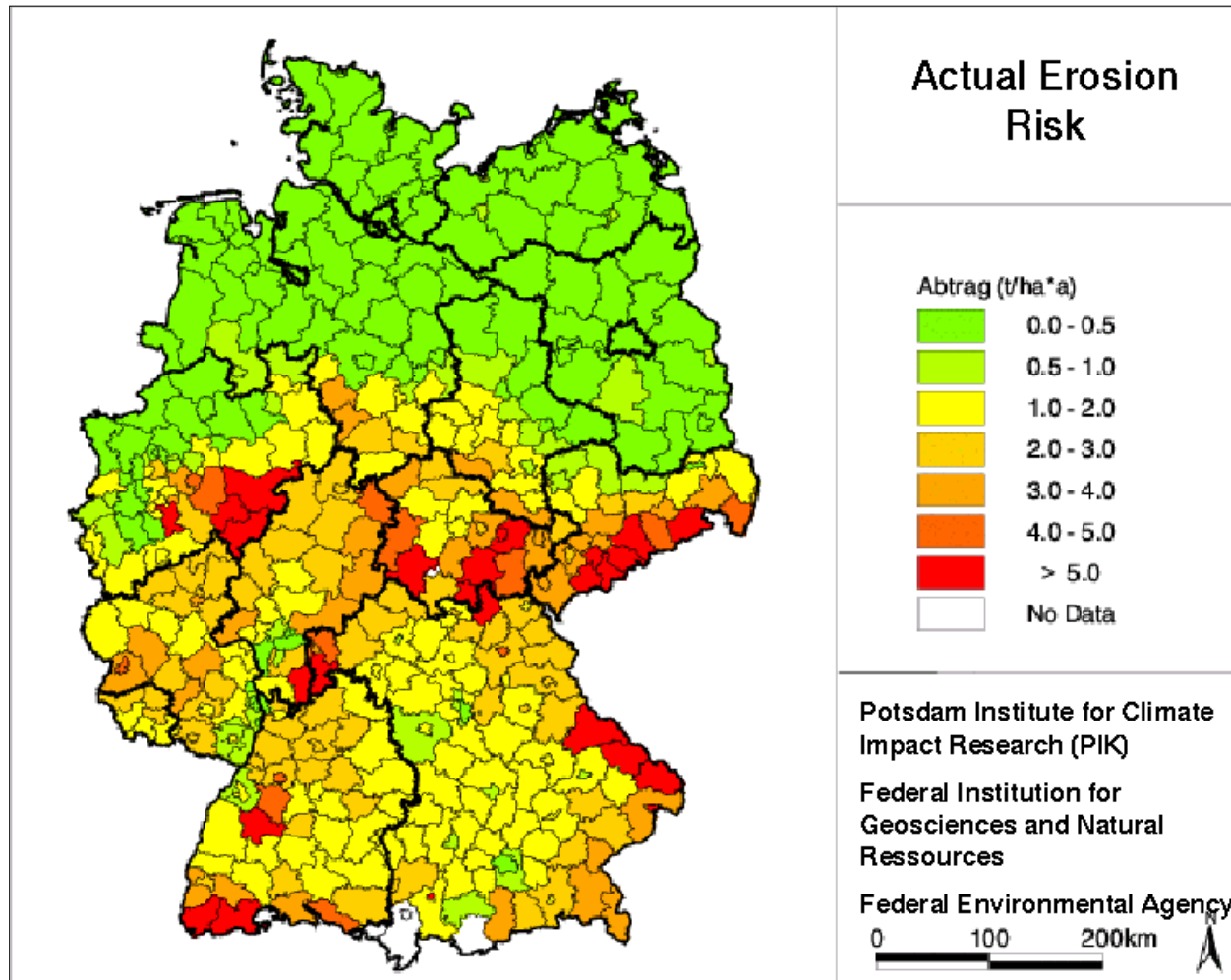
harmonisation leads to

- national/EU-wide maps
- development of agri-environmental indicators



STS: Example

actual erosion: erosion potential risk + land use from CLC





CLC - Future Perspectives

Climate Change

- **UN Framework Convention on Climate Change (UNFCCC)**
changes of forest, agricultural areas, grassland, wetlands, settlements
- **Kyoto Protocol (LU/LUCF)**
carbon sinks, ARD, etc.

Nature Conservation

description of ecosystems based on CLC and additional data on soil and climate → EUNIS classification of the EU habitat guidance



CLC - Future Perspectives - Prerequisites

- long term comparability of data
- continuity of data supply
- consistency and coherence of data

→ integration in GMES?