

Sometime land use will change and nobody will seem to notice

A case study from Transylvania (Romania)

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Background: Rural change in Transylvania

1. Land restitution process after 1990
 - Land fragmentation
 - Small-scale farming

2. Accession to the EU 2007
 - introduction of Common Agriculture Policy (CAP) instruments:
 - Different subsidy programmes
 - Land Parcel Identification System (LPIS)

 - Increase in the proportion of abandoned land
 - Decrease in cattle livestock numbers
 - **Land cover change**
 - Detection is important for EU policy instruments

Case study area: Nature hotspot



- north-western Romania
- 2 communes, 112 km²

Subsistence and semi-subsistence farms



Presentation at the IAMO forum in Halle (Saale), Germany. 20-22 June 2012. Copyright Inge Paulini.

Permanent semi-natural grasslands dominate



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Recognized High Nature Value: protected area (Natura 2000)

Despite this, **agri-environment payments** for **semi-natural** grasslands are not available for farmers in these communes

Agri-environment payments: *financial reward for a land management supporting nature conservation.*

Research Questions

Selection of communes for agri-environment payments: **more than 50% semi-natural grasslands.**
Basis: Corine Land Cover Map.

Because of this contradiction we investigated the following questions:

- What is the real extent of grassland in the communes?
- How was the exclusion from the payments for semi-natural grasslands possible?

Methods: Data about land use

Absence of up-to-date cadastral maps and a comprehensive & detailed land use / grassland map of Romania →

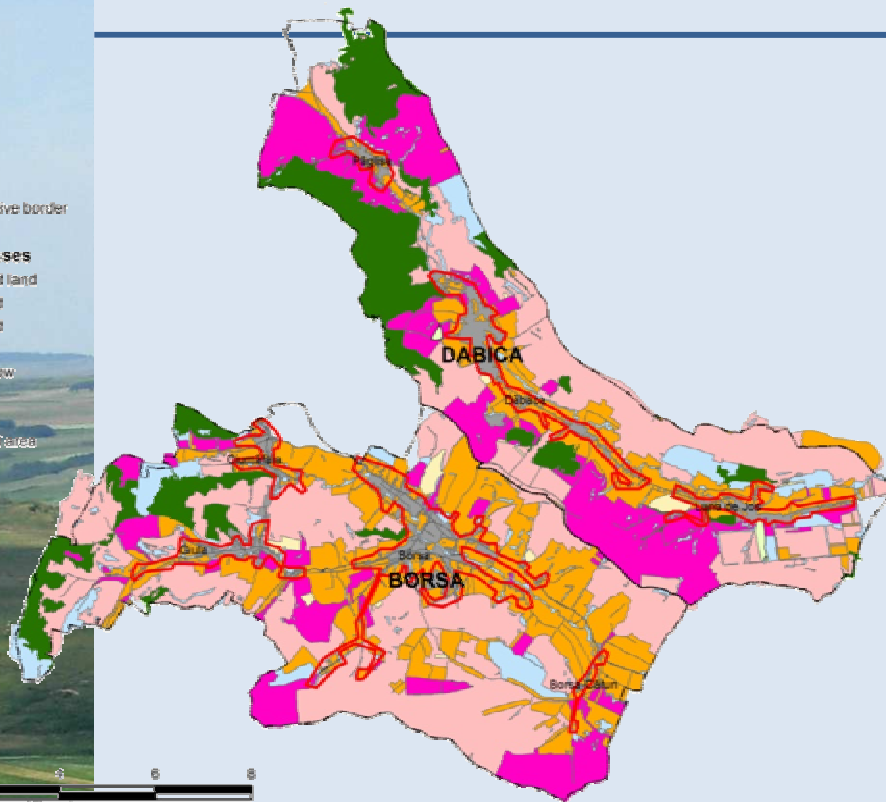
1. Generation of own land use map 2011
 - Field mapping
 - Information from locals

2. Comparison with geographical and statistical sources linked to the current land use:
 - Corine Land Cover Map
 - LPIS data (rough land use units (physical blocks), based on orthophoto interpretation)
 - Local statistical data based on agricultural register

Results (1.1): Comparison with Corine

Legend

-  administrative border
-  urban area
- land use classes**
-  Abandoned land
-  Arable land
-  Fallow land
-  Forest
-  Hay meadow
-  Grazing
-  Pasture
-  Residential area
-  Road

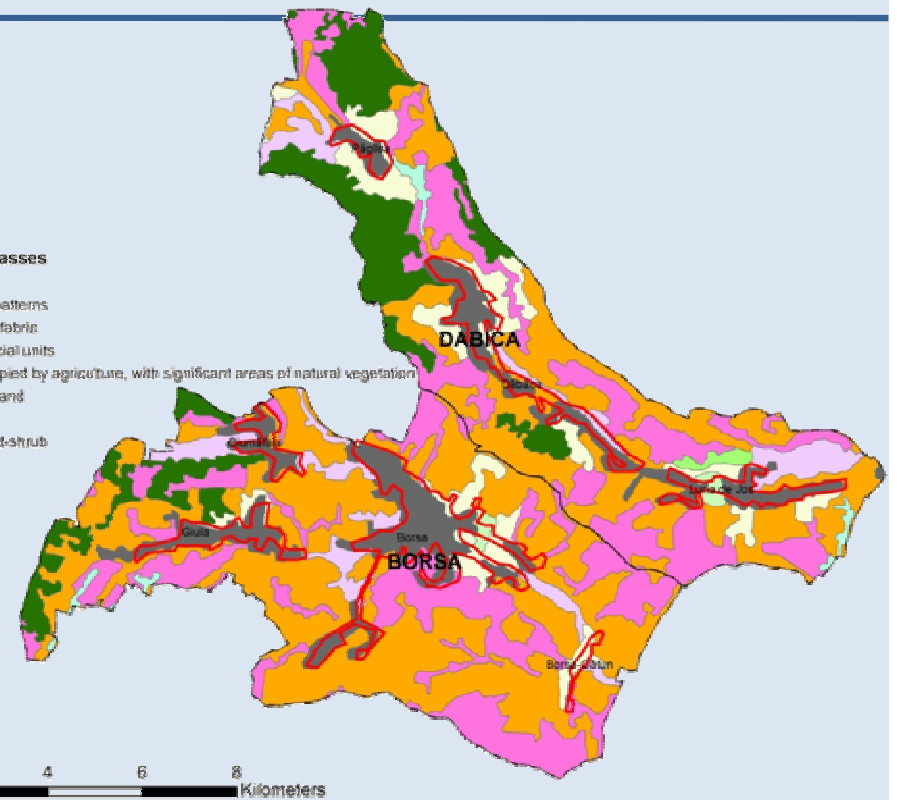


Own mapping

Arable: 29%
Grassland: 66%

Legend

-  administrative border
-  urban area
- CLC 2000 land use classes**
-  Broad-leaved forest
-  Complex cultivation patterns
-  Discontinuous urban fabric
-  Industrial or commercial units
-  Land principally occupied by agriculture, with significant areas of natural vegetation
-  Non-irrigated arable land
-  Pastures
-  Transitional woodland-shrub
-  Vineyards



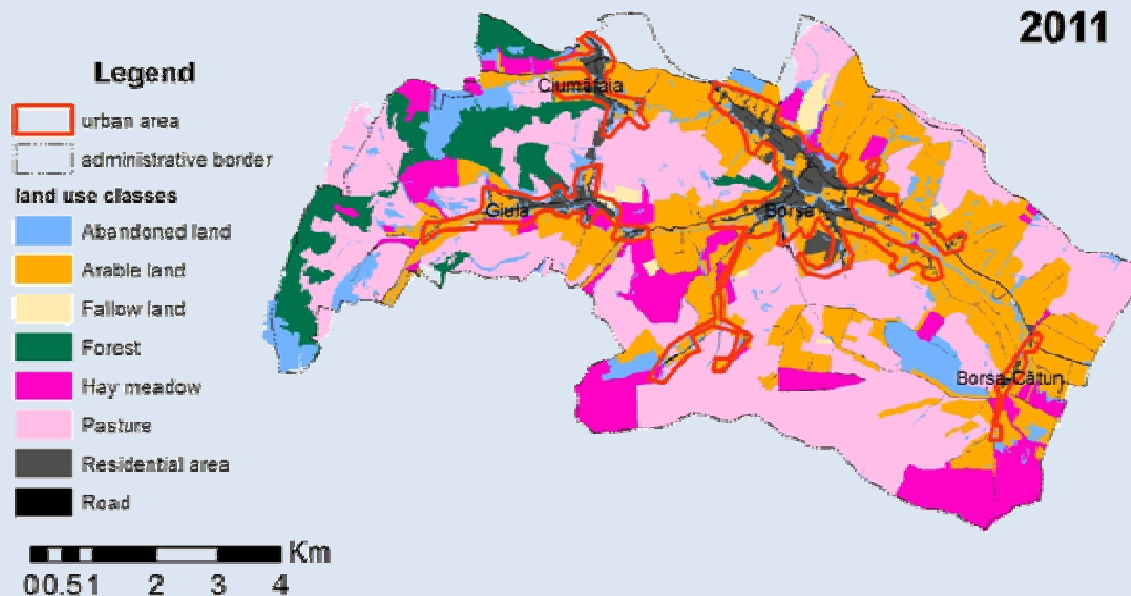
Corine

Arable: 51%
Grassland: 32%

Results (1.2): Comparison with Corine

- Issues of Corine:
 - Interpretation of satellite images
 - Low resolution (max. 25 ha units)
- Corine is not sufficiently accurate to be the main basis for targeting agri-environment payments at semi-natural grasslands
 - Rather coarse classes (e.g. no distinction between extensively / intensively used grasslands) (Paracchini et al. 2008)
- Our case study shows, that important grasslands lack appropriate protection due to insufficient land cover data basis

Results (2): Comparison with LPIS and communal data



Own mapping 2011:

Arable: 29%

Grassland: 66%

Communal data 2008:

Arable: 56 %

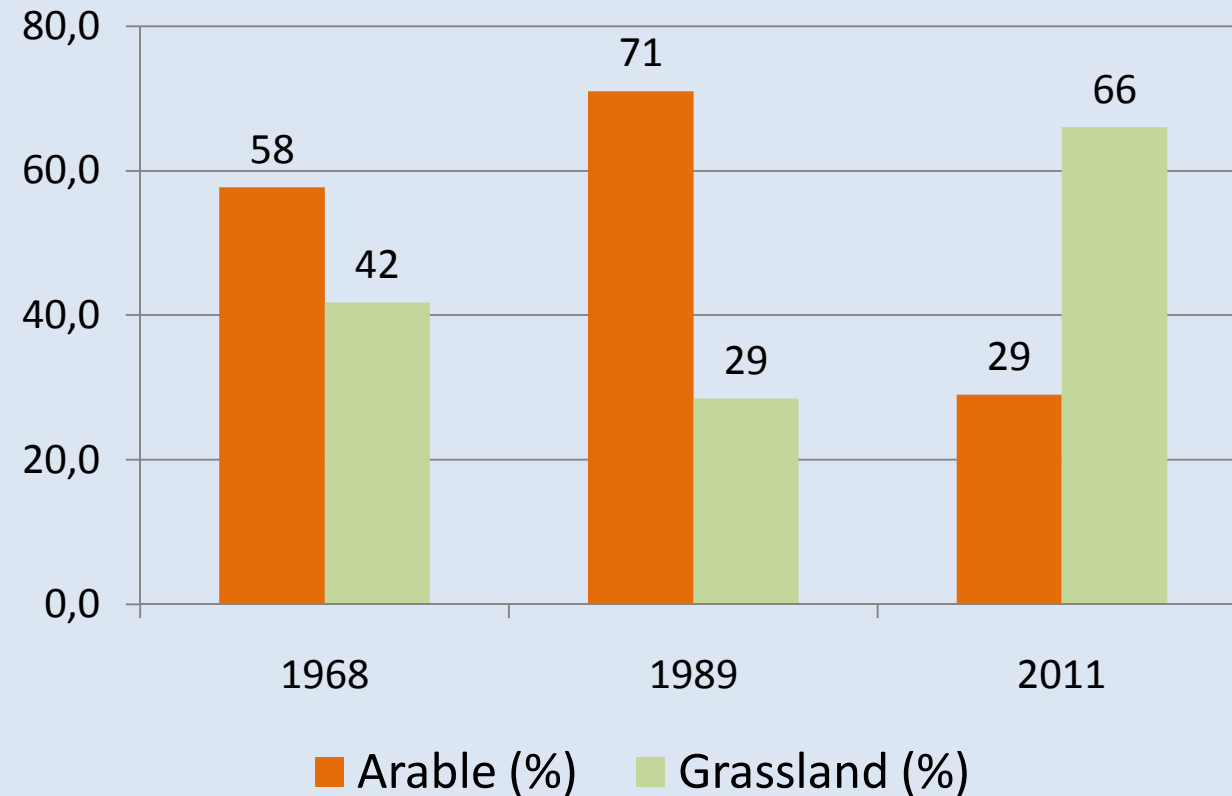
Grassland: 45 %

LPIS map 2006:

Arable: 71 %

Grassland: 29 %

Results (3): Comparison with former land use



The cropland area decreased dramatically over the last 20 years, being replaced by grasslands

→ succession of vegetation on abandoned cropland starting in the 1990s

Discussion: Differences of LPIS and communal data

- **LPIS map:** difficulties in determining on orthophotos whether a polygon is cropland / newly installed grassland on recently abandoned cropland
- **Communal statistical data** are mainly based on information submitted by farmers + on the copying of register entries from one year to the next
- Farmers may have independent understanding of land use terminology

Discussion: Protection of permanent grasslands

- In our area the available subsidies give no financial incentive to change the declared land use from arable to grassland.
- the declaration is likely to be wrong in many cases
- any decision based on the data could be flawed, e.g. eligibility for a payment for long-established grasslands, protection of permanent grasslands

Conclusions

- The two study communes are undergoing rapid land use change (not least due to their proximity to the city of Cluj) which is hardly reflected in official data sources.
 - The problems identified are ones of process and administration and are likely to be present more widely.
 - EU policy instruments for rural development and nature protection can't be implemented properly without good information about land use.
- An accurate Romania-wide land use / cover survey is needed urgently.

Thank you for your attention!

